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### INDUSTRIAL EDUCATION IN CINCINNATI<sup>1</sup>

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For more than fifty years industrial education in Cincinnati was provided for almost exclusively by the Ohio Mechanics' Institute, a liberally endowed and well-equipped institution founded in 1828.

In 1906 Dean Schneider introduced into the department of engineering of the University of Cincinnati, a city institution supported by taxation, his well-known plan of co-operative education, the students spending alternate weeks in school and shop for five years, working summer and winter. A new building is nearly completed for the use of this department and the permanency of the method seems to be established.

In 1907 the Board of Education determined to offer an opportunity for vocational training, and began the erection of two new high schools, each costing, including equipment, nearly one million dollars. While they are cosmopolitan high schools in which all courses are offered, they provide especially for the industrial education of both sexes. These courses are designed to discover special aptitude and give general manual dexterity in the first two years. Then students are placed in commercial shops and continue their schooling either on the alternate-week plan for the next two years, or one-half day a week if the necessity of the individual case requires it. The boys give three to four hours of the six-hour day to wood work in the first

<sup>&</sup>lt;sup>3</sup> Read at the meeting of the National Society for the Promotion of Industrial Education, Boston, November 18, 1910.

school year, and to metal work in the second year. In June of the second year, after their preference for a special trade has been discussed with their teacher, they are placed with employers. If they do not make good by September they may return to school and change their course. These schools are not trade schools, but they enable boys (or girls) to discover their aptitudes and enter a trade intelligently at sixteen, which is practically the legal age in Ohio. The school then follows them for two years and gives them practical knowledge, while skill in the trade is given in the real shop.

Of course the school shops run at night and are open to adult workers and also to apprentices. There are 2,400 enrolled at present in the industrial night classes. It was soon found, however, that night work does not attract the apprentice. Concentrated attention to a machine for ten hours leaves little surplus energy to draw on at night. A city offers many attractions more alluring to a young mechanic than a night school. After repeated and urgent advertising in shops, we were able to get less than eight hundred apprentices in the iron industry who would settle down to regular night instruction. For example, we got twenty-six pattern-maker's apprentices, and those dwindled to sixteen. They were not to blame. They had not the physical endurance.

Thus we came to see that the apprentice is distinctly a daytime proposition. His education must be given not in addition to his work, but in the place of a part of his work. Some of the progressive manufacturers of our city, realizing this, introduced apprentices' schools in their factories, but they found themselves unable single-handed to cope successfully with the situation for many reasons. An agreement was finally made with the Board of Education to establish a day school for machine-shop apprentices. The plan was submitted to the Central Labor Council, to a committee of manufacturers, and to the Board of Education, and received the approval of all.

The continuation school for machine-shop apprentices was opened September 1, 1909. It runs forty-eight weeks a year, eight hours a day, four and a half days a week, besides two half-

days which are spent by the teachers in visiting the boys in the shops, seeing the conditions under which they work, consulting with the foreman about the needs of the boys, and getting ideas and materials for their guidance in teaching. This is an essential part of their work, for there is no handed-down course of study as yet. It must be worked out as they go along.

The students keep a complete file of their work, so that the details of the course lie behind them instead of ahead of them. The course runs through four years, and consists of one hour of blue-print reading, freehand and mechanical drawing, one hour of practical mathematics, one hour of shop science and theory, and one hour for reading, English, spelling, commercial geography, and civics; the last hour takes the form of stereopticon talks, readings from industrial history, biography, and geography, and discussion of civic and labor questions.

There are about 200 students, divided into nine groups, according to proficiency. They come one half-day, four hours a week, and are paid their usual wage for attendance by their employer, and are docked for absence. The least mature boys come on Monday, the most mature on Friday, and graded groups between.

The grading of the students must be somewhat elastic, owing to the difficulty of arranging a program for the individual boy that will best suit the convenience of the manufacturer, and also owing to the great differences in the mental attainments of the boys—some having been in high school and some not able to repeat the multiplication table or spell the names of the days of the week. This necessitates having two teachers to a group of twenty or twenty-five, one to conduct the general work and the other to give much individual instruction.

The entire cost of the school is about three thousand dollars a year, or about fifteen dollars a pupil, on the basis of the average number in attendance.

Strange as it may seem, the chief difficulty encountered in the operation of public schools for apprentices is not in securing the interest of the employers, the approval of labor organizations, the willingness of boys to come, or the necessary funds from the Board of Education; the chief difficulty is in securing properly qualified teachers, teachers who will command the confidence of foremen and employers by their knowledge of shop conditions, who will secure the interest of boys by their enthusiasm and skill in instruction, and who at the same time meet the demands of school authorities as to scholarship and character. We must steer clear of the charlatan on the one hand and on the other hand of the school pedant who has knowledge in water-tight compartments. After corresponding with technical schools all over the country and finding no suitable person, I decided to study the shop men of our own city and found a man who had worked nine years in the shops and had left to prepare to be a teacher. His old love for the shop came back to him, and he had been for several years teaching apprentices in the shop. He had worked over his whole scholastic outfit in terms of shop practice. He had studied the machines to see the problems they presented in mathematics, science, and drawing. Elimination of waste and economy of output was the guiding principle of his investigation and instruction. He trains his own teachers, and now has three under way, who are assisting by night or day.

The school operates at night for the improvement of adult machinists. On Friday night the class is composed of foremen—thirty-two at present—and their discussions illuminate all

phases of shop work.

The work of the school is closely applied to the work of the shop. It is designed for the intellectual improvement of the boys and to give them intelligent interest in what they do in the shop, but there is no machine work in the school. For example, suppose the drill press is under consideration. They first read the catalogue description (catalogues are supplied in sets of twenty-five by the manufacturers). The technical names of parts are noted. Different machines are compared and their respective merits examined. The scientific principles involved in their operation are described. This leads naturally to a study of the blue prints, which are supplied by the manufacturers. This is followed by freehand drawings of some parts of the machine. In the discussion the mathematical relations receive

especial consideration. For instance, the speed of the spindle as determined by the relation of the diameters of the cone pulleys is a problem in complex fractions, and the boys for the first time in their lives discover the use of what in their early school days was a senseless puzzle. An hour's lesson on complex fractions follows, using an arithmetic first and then a prepared sheet of exercises applied to the drill press. These lessons are prepared beforehand with great care by the teachers. A blue print of each lesson, with the details to be worked out clearly indicated, is placed in the hands of each pupil, so that there is no waste of time. These when filled complete what are called "dope sheets" by the boys, and are filed by each boy in his large envelope. The exercises are arranged in sequence so as to conduct the boys through arithmetic, algebra, geometry, and trigonometry, using only those parts that have practical application in the shop with such essential principles as are necessary for an understanding of the shop problem.

The above description will apply fairly closely to two or three of the four hours' work a day. The last hour, as indicated before, is recreational, inspirational, informational, and cultural. A piano is provided, a stereopticon with hundreds of slides, maps, and charts, sets of books on civics and industrial biography, and so forth.

The employers and foremen say there is no loss in output by the boys' being out one half-day a week. They more than make up for the absence by their diligence and zeal when they are at work. When the boys start to school they are as a rule depressed, indifferent, disgruntled. They look upon their employer as an aristocrat, their foreman as a slave-driver, their machine as a treadmill, and the world at large as against them. Their faces are frozen in a perpetual grouch. The path to advancement seems long and uncertain. As they feel mind and body settling in a groove they become rebellious and ready to quit. The school comes as a new interest in their lives. They can scarcely realize at first that anybody cares, but soon they thaw out and a new light shines in their eyes. They see for the first time the purpose of instruction which bored them in school days. They have a motive. They can put their knowl-

edge to use. They become interested and intellectually awakened. Their attitude changes toward their employer, their foreman, their machine, the world. They are no longer mere hands, cubs, operatives; they are becoming masters of an honorable craft. As they are induced to go from one shop to another they have been known to make it a condition that they be permitted to attend the continuation school.

The Board of Education and others in our city who have seen the effect of this school on the boys persuaded the Ohio legislature last spring to pass a law authorizing boards of education to establish continuation schools and requiring the attendance in daytime, not to exceed eight hours a week, of all who go to work under sixteen years of age. The Cincinnati Board has set aside fifteen thousand dollars to put this law into operation in the year 1911. It is therefore evident that our experience gives us faith in the idea. We purpose in Cincinnati to open two classes of continuation schools, one compulsory, for those who are under sixteen, the other voluntary, for those who are apprenticed. The plans are now ready to open such a school in salesmanship for girls in stores.

It seems strange that all oversight of children ceases when they go to work, strange that the state has not considered it a duty to look after their education at the critical period of their existence. Then, if ever, they need moral guidance and ideals kept steadily before them. That is the time they feel their deficiencies and need instruction and direction. Then they need to be taught to apply what they know to a practical situation. Then their attitude is determined, and they will become mere drudges, shirks, and outcasts, or will acquire that joy in work which will transform their task into an interesting vocation and themselves into interested and ambitious craftsmen. As I see it, we should not wait for trade schools to catch boys and lead them to a vocation. We must catch the boys and girls when they go to work, letting them get their skill under commercial conditions but supplementing it as they go along with the guidance and instruction they need in this crisis of their lives.

### THE TECHNICAL DAY TRADE SCHOOLS IN GERMANY 1

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The development of German industry and of German commerce since the foundation of the German Empire is one of the phenomena which both we at home and our neighbors around us regard with astonishment, and which force us involuntarily to ask what were the intrinsic causes that brought this development to pass. Hand in hand with it we see also the advance of the entire system of technical schools. All German states are paying increasing attention to these technical-school systems. The sums paid from the public purse for technical instruction have reached a height unknown before. In Prussia, the largest state in Germany, the state expenditure for continuation and trade schools amounted in the year 1886 to 570,000 marks: this expenditure rose in the year 1893 to 2,300,-000 marks, in the year 1903 to 6,300,000 marks, and attained in the year 1908 the height of 12,000,000 marks, or, in round numbers, three million dollars. The expenditure for technical schools has risen in a similar manner in Austria, where it amounted, with the exclusion of Hungary, in the year 1896 to 5,200,000 crowns, in the year 1906 to 10,300,000 crowns, and in the year 1908 to 14,500,000 crowns.

It is natural to presume that these rapidly rising curves of industrial development and technical training both at home and abroad stand in intimate connection with one another. We may be inclined to give technical training credit for a considerable portion of this industrial development; for it might be reasoned that technical training must have preceded the visible results of this training. But it is equally possible that industrial development preceded the development of technical training, and that thus the requirements of industry were the direct or indirect causes for the establishment of new technical schools. And it is

<sup>&#</sup>x27;An address given under the auspices of the National Society for the Promotion of Industrial Education.

also quite possible that though our technical and commercial schools have not failed to influence the development of German industry and trade they have by no means been the determining factors in it.

It is not my object at present to investigate these questions. Some of the answers will present themselves in the course of our inquiry into the development of German technical schools, their number, scope, and ideals.

In spite of the great expansion of the technical-school system in Germany, it is not difficult to obtain insight into its essential features, owing to the German tendency to unification, and especially to the fact that the schools have arisen partly or entirely through state initiative. It will be advisable to distinguish three groups of schools, according to the grade of training to which they aspire. German industry and trade require, precisely like the German army, a number of intellectually highly-trained officers, a number of well-trained subalterns, and an army of efficient soldiers.

The group of technical officers is almost exclusively recruited from the German technical colleges. These institutions are open only to students who have passed through the nine classes of the secondary schools. They educate the technical leaders of industry and also the state and municipal officials who are intrusted with the execution of technical problems. They receive their pupils after a school course of twelve or thirteen years, including the primary and secondary school, running from the pupil's sixth to his nineteenth year. Frequently a year of practical work is thrown in between the secondary school and the technical college. These technical colleges supply us for the most part with the higher technical heads of factories, whose duty it is to strike out new paths and discover new tasks and methods.

Two different kinds of schools exist for the training of subaltern officers: the middle and the lower technical training schools. The technical middle school expects its pupils, as a rule, to possess the knowledge and dexterity that are acquired by a six-year course at a higher secondary school. This six-

year course is a continuation of the first four years in the primary school. Its concluding examination gives throughout Germany the right to serve one year in the army instead of three. Two years' practice in the workshop is generally required before admittance to these technical middle schools. It is the purpose of these schools to provide industry with skilled men, who can serve immediately under the technical leaders as competent helpers either in the office or in the works. They also train the subaltern technical officials for the municipal and civil service. The time allotted them for this task is from two to two and a half years. The pupil is therefore about twenty years of age when he leaves school. (Compare also in Abhandlungen und Berichte über technisches Schulwesen the report of Director Rommberg of Cöln, p. 83.) In place of the qualification for the one-year military service that is gained by the concluding examination of a school with six classes, the pupil can undergo an entrance examination for the technical middle trade school.

In addition to these schools there exist a great number of technical lower trade schools for the training of foremen, engine-fitters, masters, or other lower officials for the constructive and business departments of works and factories. The conditions of admittance are graduation from the primary school (with eight classes) followed by at least four years' practical work. In other words, only thoroughly trained workmen are received in these schools. The period of instruction varies from one to two years. Foremen proper, as required in industries, that is to say, workmen placed at the head of a group of other workmen in factories, are as a rule not trained in either of these trade schools. These men must be possessed not only of sufficient technical experience but also of special qualities of character, which are inborn and cannot be acquired in a two years' school curriculum. In the opinion of most German manufacturers it is best to take these foremen from the ranks of the most capable workmen. What they lack in technical training is supplied by the third group of schools.

This third group of schools might be designated as technical

workmen's schools. They are spread all over Germany, in the shape of continuation schools, factory schools, apprentices' schools, Sunday and evening schools. Their essential characteristic is that school attendance generally runs parallel with the training in practical work. In all large and most small towns of Germany, apprentices and other youthful workers are under the obligation of attending a continuation school for from six to nine hours weekly during the working days. This continuation school must as far as possible take the practical work of the apprentice as the basis of its teaching. In some few cases factories have established schools as part of their organization, in which every apprentice without exception receives higher instruction for from two to four hours daily. In other places, again, special apprentices' schools have been established for locksmiths, machine-builders, joiners, weavers, plumbers, etc., which take the place of the ordinary apprenticeship. Moreover in all German towns evening and Sunday trade schools exist for workmen, similar to those common in England and America. I class all these schools together under the name of technical workmen's schools.

In many cases these technical workmen's schools are affiliated with the technical middle schools. They make use of the same workshops and classrooms and have the same teachers. The more gifted pupils can go up from the workmen's schools to the middle and even to the higher technical schools, provided, in the latter case, that they are able to pass the entrance examination. They have a considerable advantage over many pupils of these higher schools in their thorough practical training. This is a point on which of late years special stress has been laid in admittance to the lower and middle trade schools. Only as an exception and under quite peculiar circumstances is it considered advisable, in the interest of industry, to admit young men to the lower trade schools who have been trained, not in the workshop, but in the office. The possibility of thus moving up from one school to another not only provides industry with capable workmen but also builds a ladder by which men from the middle and poorer classes may mount up to better-paid posts. The

technical middle schools thus also supply a social want. On the other hand it is, as a rule, impossible in Germany for a pupil who has passed through the technical middle school to enter the technical colleges as a matriculated student, and thus to gain the qualification for a leading officer of industry. The only technical middle school that accords its pupils the right of matriculation as students in the technical courses of the university is the Trade Academy of Chemnitz in Saxony. There is no other German school of the same kind. Industry, however, pays little attention to this system of qualification, and although the pupils of the technical middle schools rarely become students in the technical courses of the university, we nevertheless not infrequently see them in higher industrial posts. Englishmen and Americans will find it difficult to understand such rigorous distinctions, for they are more accustomed than we in Germany to inquire not what school a man has attended but what he has learned and what he can do. Yet the German system is not altogether without justification. Examinations rarely give a true picture of a man. We rarely succeed in so ordering them that memory is not placed at an advantage over real capacity. But in spite of the fact that a man's best qualities generally remain hidden from the examiner, our technical colleges in Germany, which have a very high standard for the training of engineers, analytical chemists, and architects, must demand a fairly homogeneous and intellectual preparatory training if their scientific training is to proceed on the same lines as hereto-This homogeneous and intellectual training is as a rule to be had only in the German nine-class middle schools which begin after the first four classes of the primary schools. would be of the greatest danger to Germany's industries if the scientific standard of her universities were to be lowered.

The technical middle schools, or, as I have called them in the title, the technical day trade schools, do not exist for all trades and industries in Germany. The industries in the service of which such schools have already been established are the various kinds of metal industry, textile industry, wood industry, shipbuilding, smelting works, and foundries. Another group

of these day trade schools belongs to the building trades, both above ground and under ground, carpentry, masonry, drainage, concrete and iron works, and the different kinds of art trades, printing, lithography, and chemical engraving. A third group deals with commercial subjects. In addition to these we have a number of lower technical schools adapted for home industries, for instance, schools of weaving, carving, basketmaking, lacemaking, etc. Finally, household schools and schools for needlework and dressmaking must not be forgotten. These schools for home industries are of the greatest importance in an overpopulated country like Germany, or a country poor in agriculture like the Alpine districts of Austria, and they are accordingly beginning to attract the attention of the state in a very high degree. Particularly in Austria the organizers of home industries have in some places succeeded by good schools in so raising the standard of production as to lead to a not inconsiderable export and to increase the prosperity of districts possessing no advantages of soil, in a manner undreamed of before. establishment of day trade schools has sometimes been the cause of more economic and social profit in these cases than in the large industries. Our magnificently developed chemical industry as well as our food industries are at present almost entirely without technical middle schools. Neither are there any public day trade schools for the clothing branches of industry. But the chemical industry is admirably provided with higher officials by our scientific schools, and numerous private schools (millers' schools, brewers' schools, tailors' academies, and women's schools) provide instruction in the clothing and some food industries.

In Germany, with an area of 540,000 square kilometers, that is, about one-third of the seventeen northern states, the number of technical day trade schools supported by states, provinces, or parishes, and therefore public schools, amounts in round numbers to five hundred. There are about the same number of agricultural schools. Among the industrial and trade schools are nine technical universities, three mining academies, and five commercial universities; twenty higher and eighteen lower technical

middle schools for the various metal industries, nearly forty middle schools for the weaving industry, nearly fifty for the building trades, about twenty for the wood trade, twenty-five so-called Kunstgewerbeschulen, and thirty more for special branches of art trades. Still greater is the number of higher and lower technical middle schools in Austria, which has been systematically spreading a net of these schools over all its states since the year 1873. It would be purposeless to give the numbers, as the Austrian system does not correspond with the German. We must be careful not to work with figures alone, in describing technical schools. People are only too prone to lose their heads over figures. But the number of schools is not the principal thing. So long as a country has pretty well what it needs, the inner organization of its schools and their relation to the requirements of its industries are of infinitely more importance.

In order to give a picture of this inner organization and its relation to industry let me consider some of the principal groups, the schools for the metal industry, the schools for the weaving industry, and the schools for the building trades.

Among the schools for the metal industry the most numerous are the royal schools for machinery and technical electricity. They are mostly higher technical middle schools, combined in some cases with lower technical middle schools. In Prussia there are fifteen of these: Aachen, Altona, Breslau, Cöln, Dortmund, Duisburg, Elberfeld, Essen, Gleiwitz, Görlitz, Hagen, Kiel, Magdeburg, Posen, Stettin; in Bavaria there are two higher and three lower schools. Those Prussian towns in which cutlery and hardware are developed have in addition special trade schools-royal trade schools for hardware in iron and steel: for instance, Remscheid, Schmalkalden, Siegen, and Solingen, which export their wares over the whole world. All these schools, and especially the schools for machinery, have developed from the most modest beginnings. They were originally in Prussia, in the first half of the last century, so-called provincial trade schools. They had to teach simply artisans and foremen. and took their pupils at the age of fourteen from the elementary school. In the year 1870 there were about thirty such schools.

At this date they were reorganized. Admittance was granted only to pupils who had passed through the five lower classes of our general middle schools. This means going far beyond the mental horizon of the elementary-school pupil. These schools underwent a second transformation in the year 1878. Most of them were then changed into middle schools with nine classes, for purposes of general education, the so-called Oberrealschulen of today. Only five of the old schools retained the organization of a so-called technical middle school (Gleiwitz, Breslau, Hagen, Barmen, Aachen). The third transformation took place in the year 1880. In this year a higher technical middle school for machinery, of the kind already described, was established in the town of Cöln. A lower technical middle school, a so-called foremen's school, was attached to it. A few years later a similar school was established in Dortmund, and ever since this system has been adhered to. The development of schools in Bavaria has proceeded on the same lines as in Prussia, since the last decade of the last century.

The development of the lower schools for machinery in Prussia has been exceedingly satisfactory, and the pupils turned out by them have been able to meet all the requirements of industry. They have never trained foremen. They give men from the primary school with long practical experience a technical training suitable to the preparation they have received, and leave the manner of their subsequent occupation to industry. teaching lays special stress on the training of the understanding for the principles of mechanics and the laws of solid bodies. It comprises the elements of mathematics (addition, subtraction, multiplication, and division, powers, square and cubic roots, equations of first and second degree, geometry, trigonometry, and the calculation of surfaces and contents of simple solids): mechanics (the laws of the elementary statics and dynamics of solid and fluid bodies, the laws of solid bodies); physics (heat, gases, fundamental laws of optics); chemistry (the elements and the chemical compounds that are important in machinery, metals and metaloids); technical drawing (drawing in projection, geometrical and freehand drawing, and especially freehand sketching); mechanical technology (founding, forming, forging, rolling, etc.); the most important tools and machines for metal and wood, the most important parts of machines, the elements of machine-building, the principles of technical electricity, simple building-constructions, sometimes practical exercises in physical and electrotechnical laboratories, for taking measurements with the simplest instruments. To this must be added instruction in German, arithmetic, the writing of cost-estimates, and the inspection of factories. All these subjects are spread over four half-yearly terms. The certificate awarded at the end of the course gives the right to the title of master and to the engagement of apprentices. Therefore we call these schools "privileged schools."

It is not devoid of interest to note the answers given by leaders in industry to inquiries lately made by the "German Committee for Technical Schools" with a view to more thorough organization. They point out that it matters little how far the pupil advances in the different subjects of instruction, but it matters a great deal whether he is thoroughly grounded in them; that it is not a question of increasing theoretical knowledge but of enlarging practical experience; that these lower technical schools train too many office men and too few foremen. fitters, and masters; that their chief aim should be to develop readiness of apprehension, the ability to draw, business capacity, and interest in natural science; that men who have passed through the state schools have on an average a better general and technical education than the pupils of private schools, and that it would therefore be in the interest of industry if all technical schools in Germany were exclusively in the hands of the state. In many cases the answers assert that even at admittance the very greatest attention should be paid to the practical experience possessed by the candidate. Four years are not considered sufficient. They demand a four-year apprenticeship and after this four years' work as journeymen. And they urge the necessity of advising the pupils on leaving school not to crowd into the offices, but to seek positions in the workshops, which stand higher in repute and are better paid than the former.

The higher schools for machinery go considerably farther than these just described. They presuppose a fairly good general education, such as is gained in a six-class middle school in Germany, and generally demand in addition two years' practical work. On this they base a curriculum of two and a half years' instruction. The subjects taught are in the main the same as those of the lower machinery schools, but they are treated more scientifically and give the pupils the knowledge requisite for simple construction under supervision or for reproduction. In mathematics the pupils go as far as differential and integral calculus; in mechanics, to which the greatest attention is paid, they study the elements of heat in physics, machine-building, and technical electricity, and they receive particularly careful instruction, both theoretical and practical, in laboratories especially fitted up for these three subjects. All proprietors of works and factories lay stress on the importance of laboratories, and the Memorial on the Technical Schools of Germany points out that many of them mention the necessity of technical experiments and continued observations that might well be placed in the hands of men trained in technical middle schools. Naturally great importance is attached to training in drawing, not only geometrical drawing but freehand sketching, and on the reproduction of machines and parts of machines from memory. Many regard education in the faculty of space-conception as absolutely necessary in these schools. In mechanical technology the pupil is introduced to tools and machines, to smelting, founding, forging and rolling processes, and to the study of raw materials; in building construction, to the combinations of stone, wood, and iron, to the construction of vaults, roofs, and staircases, and to the elements of graphic statics. To this is added instruction in business matters, book-keeping, bills of exchange, specifications, and estimates. The time allotted for everything is on an average forty to forty-two hours a week, during a course of two or two and a half years.

The pupils trained in these schools find employment in Germany not only in industry but also in the service of the state. The latter is particularly the case when they can show good

practical ability. But their number is not great. In Prussia in the year 1904 the higher schools for machinery were training nine hundred and forty pupils. If we apportion this number among the half-yearly terms, we get in round numbers one hundred and ninety pupils per term; that is to say, the higher schools for machinery throughout all Prussia turned out one hundred and ninety pupils in 1904. If we consider that probably half of these enter state service not many remain for private posts.

The technical middle schools for the metal industry are for the most part distinctly divided into higher and lower schools. This is not yet the case in the building trades. But the necessity for the division is making itself more and more felt. We are endeavoring to place working builders, that is, master masons, master stone-cutters, master carpenters, and foremen, in schools of their own, with a lower standard, and to train technical builders, both for private and state posts, exclusively in the higher middle schools, the so-called building trade schools. These schools were originally founded for the theoretical training of ordinary builders. The first school of the kind was established as a private undertaking in the year 1820 in Munich by Mitterer and Schöpf, and raised to a public institution in 1823. The second school was founded in 1831 in Minden, Prussia. This was also the work of a private man, the district building-inspector Haarmann. In both cases the founders were inspired by their recognition of the fact that the theoretical knowledge and the ability in drawing of the working builders were entirely insufficient. Other building schools followed later, partly established by the state, partly by private business men, but in the latter case first subsidized by public money and eventually passing into the hands of state or commune as public schools. But they were all founded as lower middle schools. Not till later, after state and commune had begun to require a certain class of technical workmen, and after the public for its own security had begun to take an interest in the training of private builders, was the standard of these schools raised. To these external causes we must add an internal cause, which has made itself apparent in all technical schools in the course of their historic development. Every school has in itself a motive for progressive expansion. This process of transformation is seen not only in Germany, but in all countries. It may even be a danger for technical schools, in spite of its intrinsic justification. The teacher is constantly seeking to make his instruction wider and more thorough, and this pushes the pupil, at first unintentionally, beyond the limits of artisanship. But as it is impossible for a trade to flourish which is being automatically drained of its most intelligent members, it must be a fundamental principle, in the organization of all technical schools, to preserve the pupils' joy and interest in personal, manual work.

In Germany there are at present forty-five higher technical middle schools for builders. They are trade schools, and train their pupils in five half-yearly terms to become either independent masters or assistant workmen for office or building (drawers and foremen), or technical workmen for the state, the army, the railway, or the municipality. The conditions of admittance are: an age of sixteen, an entrance examination, or the certificate for the voluntary, one-year military service, and, as in the machinery schools, practical work of at least twelve months' duration. Exceptions are sometimes made to the last condition. In South Germany the four half-yearly terms are frequently placed in the winter months, so that the pupils can return to practical building-work during the summer. Paragraph 89 of the German Military Law allows pupils who have passed the final examination with honors certain privileges in going in for the examination for the one-year voluntary military service.

Most German building-trade schools have been equipped for building above ground, but some few also embrace underground building, as well as iron construction and concrete building. Instruction in German trade schools for building above ground generally embraces the practical subjects, construction, drawing, the theory of building and composition, and also the preparatory subjects, such as algebra, plane geometry, geometry of solids, and trigonometry, physics, chemistry, projection, freehand drawing, modeling, surveying, and the study of materials. The only general subjects are German, the theory of business and law.

and arithmetic, including cost-estimates. The number of weekly lessons is on an average forty-four, so that the weekly number during the five half-yearly terms amounts to two hundred and twenty. In the department for underground building some of these subjects are curtailed in order to gain time for instruction in earthwork, road-building, canal construction, bridge-building, railway-building, and the theory of machinery. The principal part of the hours for instruction—about one hundred and ten—is engrossed by the technical subjects, while only twelve to fifteen hours remain for general subjects.

I do not wish to say that this peculiarity of the German building schools is worthy of imitation. In fact far too little attention is paid to general culture in most German technical middle schools. In this point they compare unfavorably with the French and Austrian schools. I shall return to this subject later on, and only remark here that the reorganization of building schools in Austria of December 17, 1909, bears witness, in my opinion, to a deeper insight into the essence of true technical culture. According to the regulations of this organization it is to be the task of the new trade schools for builders to foster the study not only of technical subjects but also of those pertaining to general culture, with a view to supplying the trade with men whose education is not inferior to that bestowed in the general middle schools. Consequently these schools entitle their pupils to the one-year voluntary military service and exempt them from the theoretical part of the master builders' examination. The Austrian schools receive pupils at the age of fourteen with the education given by eight years in primary schools. These schools consist of a four years' course, which includes thorough practical teaching both in school workshops and on private and public buildings. The first practical introduction to the trade takes place in the first and second year in the school courtyard. The third year consists of two winter half-years. interrupted by a summer half-year spent in practical service on buildings, and only the fourth year is devoted entirely to theory.

I have already mentioned that the lower middle schools for builders in Germany lag far behind the higher middle schools. They are mostly attached to the higher schools. Only in Austria have they recently been made entirely independent as building schools for artisans. They consist there of two technical courses of five months in the winter; the conditions of admittance are graduation from the primary school, apprenticeship, and three years in a continuation school.

The schools for metal-workers and builders were not founded originally to meet the requirements of trade and industry. This was, however, the case with the schools for textile industries. The introduction of the power-loom turned the workman himself into a machine. All that he had to do, or that he still has to do, is to watch the unvarying movement of a machine that is complete in itself. He has nothing to do with the process of weaving and nothing with the building of the machine. Thus he generally lacks any kind of stimulation from without, and consequently remains devoid of any higher mental or technical development. Yet even the textile industry requires intelligent workers who can be made use of as foremen and directors. This fact led manufacturers to demand the establishment of lower schools for weaving and spinning, and in some cases even to take the matter into their own hands. In other districts, where weaving was extensively carried on at home in the winter months. schools were founded in order to give peasants' daughters and servants, and young men as well, an opportunity of at least learning how to make linen, half-linen, and cotton fabrics for personal use. This last object was the origin of the numerous weaving workshops in Hanover and Silesia. As the artistic taste for hand-woven carpets, curtains, and furniture covers is increasing in Germany, it is not improbable that these simple opportunities of instruction will spread still farther in poor districts, as has been the case in Sweden. Later on, after the number of power-looms had multiplied exceedingly, and the processes of weaving wool, cotton, linen, silk, and velvet had been correspondingly developed, the sons of manufacturers began to feel the need of higher schools. The foundation of these higher schools was also favored by the desire on the part of the manufacturers to make themselves independent of foreign countries. In the first half of the nineteenth century young men who wished to learn the secrets of weaving were forced to go, at great expense, to Lyons, where both public and private weaving schools had long existed.

German industry was also greatly hampered by the difficulty of procuring patterns, and the necessity of training pattern draughtsmen became self-evident. Courses in drawing had become especially indispensable in the schools for the woolen industry, in which the pattern is generally attended to by the same employee who has the post of supervision in the machine-room. The higher weaving schools could be made use of for this purpose. A factory-pattern drawing school was soon attached to the oldest German weaving school, in Elberfeld, founded in 1845. A second weaving school was founded in 1854 at Mühlheim on the Rhine, and a third in 1855 at Krefeld. The Elberfeld school was also enlarged, at the suggestion of the manufacturers, by a chemical department for dyers, printers, and bleachers. In the same manner the development of German trade made it necessary to add commercial courses to the weaving schools, for the instruction of clerks in drapers' shops and factories in the knowledge of wares and the processes of work in the different branches of the textile industry. And finally the weaving schools are sometimes combined with courses for dressmaking, frequented mostly by female pupils. These courses are most numerous in Berlin, the principal seat of dressmaking in Germany.

The technical middle schools for textile industry are particularly developed in Prussia, where they were reorganized in the year 1896, as a result of conferences held between the directors of the weaving schools and experts in the trade. The influence of the textile industry made itself particularly felt on this occasion in the specialization of the different schools in the various districts in the kinds of weaving for which they were required. In this point also the technical middle schools for the textile industry are distinguished from those of the metal and building trades. In the latter, as opposed to the textile schools, there is

a strong tendency toward unification, special stress being laid on the technical basis common to all the different branches of the trade. Later on Bavaria followed the example of Prussia.

In the conditions laid down for the admission of pupils to the lower and higher weaving schools it became clear that neither state nor municipality had the same need for skilled technical workmen in textile branches that they had in the metal and building trades. Admittance to the higher and lower middle schools is generally granted to all pupils in possession of a fair school-training. It is left to the discretion of the director to exclude pupils with insufficient training from the higher schools. One year's practical work is usually required of the pupils before entrance. The higher weaving schools generally comprise three hali-vearly courses, and the lower weaving schools have generally a half-year course; in each half-year course there are about forty-four lessons a week. In the higher schools these lessons are divided among the following subjects: setting up the frames, putting in and taking out the patterns, machines, materials, dyes, designing, and the law concerning the trade. These subjects are treated differently, according to whether the school is arranged for the woolen, half-woolen, linen, half-linen, jute, or cotton industry. The lower, half-year, weaving schools deal with the same subjects, which are of course considerably reduced in amount. The number of day trade schools for the textile industry in Germany is twenty-seven. There are in addition a great number of workshops and schools for teaching weaving, lacemaking, and embroidery.

Besides these three large groups of public trade schools, supported with public money, by the state and municipalities, with which we must also reckon the South German trade schools for the wood industry (which are, however, without exception devoted exclusively to the training of master artisans), there still remain a certain number of trade schools dispersed through the country in the service of the most various trades, and supported partly by public money, partly by employers' associations, partly by purely private means. Saxony is the country that possesses the greatest number of trade schools. It would take us too

far to discuss these schools, although we should meet very interesting institutions among them, especially adapted to be of use in smaller trades. Day trade schools with a longer and a shorter curriculum are also attached to these German continuation and artisans' schools. For instance, day trade schools for joiners, art-locksmiths, jewelers, goldsmiths, bookbinders, stone-carvers, decorators, machine-drawers, and builders are affiliated with the continuation schools in Munich. These trade schools seek to inspire new life in handicrafts that here as in all other countries have suffered cruelly from the advance of industry. There are similar day trade schools connected with continuation schools in most German towns. The most prominent among these are the German art-handicraft schools (Kunstgewerbeschulen), of which at present about forty are supported by public money, and which embrace a great number of different day trade schools for different branches of arttrades.

Before I conclude let me recapitulate the foregoing statements and at the same time institute a comparison between the German and the American schools. We may say that most German day trade schools had their origin in endeavors to improve the condition of small trades. They commenced at a time in which industry played no important part in Germany. In the same measure as industry developed, and still more when the state began to require capable technical workers of a middle grade, did these day trade schools also begin to expand beyond the limits of their first purpose. The next step is the division into two departments, an upper one for better trained technical assistants and a lower one for artisans. The imperial German labor law had an extremely favorable influence on the development of this lower department. But the manner of their origin proves that they were not meant to replace apprenticeship to a master or manufacturer; on the contrary, they more or less presuppose practical schooling in trade and industry, and make it their office to fill the gaps left by this purely practical schooling, to widen practical experience, to teach the working classes the science and art of their vocations, and as far as possible to give

them a business training. The system of apprenticeship is not dying out in Germany. Thanks to the imperial German labor law and the continuation and lower trade schools it has fostered. and thanks as well to institutions for the furtherance of trade. and the consequent increase in skilled production, apprenticeship has gained in educational value not only in trades but also in industries. Schools that replace apprenticeship are rare in Germany. In Austria and Switzerland schools of this kind have existed for the last twenty years, but during these twenty years they have remained at a standstill. Nor can I discover any strong inclination in these three countries to spend public money on such schools. These countries have also kept the primary school free from specialized industrial education. On the other hand, during the last ten years we have been continually laving more stress on the introduction of manual training into the elementary schools, or, as I express it, on the transformation of textbook schools into working schools. In the Munich primary schools we have in the eighth class five hours' wood and metal work a week for all boys, needlework and domestic science with teaching in the school kitchen for all girls. In many German schools, as well as in Swiss schools, and still more in Swedish schools, we find the demand of the Circular of the New York Education Department of February, 1910, to the effect that industrial arts of a more general character are to be introduced in the primary grades as well as in the grammar grades, more and more frequently realized.

If I seek to compare German and American trade schools, I find that our higher trade schools most resemble your technical colleges. Only we must not forget that there is no transition contemplated from our higher trade schools to our technical universities, and that one or two years' practical work must either be presented or taken in special preparatory courses before admittance to the school.

Our numerous lower trade schools have no counterpart in the United States. The trade schools of the United States are generally intended to take the place of apprenticeship. The German trade schools on the other hand are intended, with few exceptions, to make up for the deficiencies of apprenticeship. Only the trade schools for girls take the place of apprenticeship, because no good system of apprenticeship exists for girls' trades, such as millinery, dressmaking, cooking, kitchen-management, shirtmaking, etc., as it does for boys. If in Germany the system of apprenticeship should ever approach to a similar decay, then, in my opinion, there would be no other plan for industrial schools than the establishment of specialized trade schools for all trades, beginning at the close of the elementary school and extending over four years. For there are only two roads for the industrial education of the masses: either a good system of apprenticeship, with trade schools that supply the wants of and broaden education, as do our Munich continuation schools, or specialized trade schools. There are no other means to this end. Capacity in industry and trade flourishes only on the soil of early, thorough, and many-sided technical, business, and civic training. If the public life does not give this, then the public school must give it, or industry will decay. The intermediate industrial schools recommended by the above-mentioned circular of the New York Education Department will perhaps help this result in the United States, but, on the other hand, they may grow unawares into specialized trade schools. Furthermore, the principles inculcated by the same circular for the organization of these trade schools are excellent, especially the three which demand "that the trade schools should absolutely abandon all college-preparatory work, that all instruction in mathematics and science must be such as to be directly usable, and that trade schools must necessarily take on varying forms in different lo-These trade schools then become admirable institucalities." tions for the affiliation of continuation and evening schools, precisely as they are in Germany. But before we proceed to a system of trade schools spread over the whole country and intended to replace apprenticeship, we should first make the most detailed inquiries as to the causes of the decline of the old system of apprenticeship and use every means at our disposal to stop it. For however good such trade schools may be, they

have, besides their immense cost, other defects which have so far considerably checked their diffusion in Europe.

It is of course beyond doubt that at the present moment the German trade schools are of great use to German trade and industry. But it is not easy to determine to what extent the day trade schools have contributed to the development of German industry and commerce. It appears to me certain that they have not been the prime factor.

I pointed out at the beginning that the number of men turned out by the Prussian higher schools for machine-building is far too small, even if one half were to join the ranks of industry every year, to be of any appreciable influence. middle trade technical workers required yearly by German industry must amount to at least tenfold the number now furnished by the schools. I can give you a still stronger proof of the truth of this assumption. In the course of this year the Bavarian government had occasion, for the purpose of reorganizing the building-trade schools, to make an inquiry in the one hundred and forty-three districts of the country as to the number of independent builders. They asked what percentage had passed through the building-trade school. The number of independent builders in the one hundred and forty-three districts of the kingdom amounted to nine thousand four hundred and one. Among these there were only six hundred and seventy-two, or 7 per cent, who had passed through the entire curriculum of a building-trade school, and fourteen hundred and sixty, or 15½ per cent, who had taken single half-year courses. Thus nearly 80 per cent of all independent builders had been to no trade school at all; many of these had been to a higher general school, and many had enjoyed no other teaching than that of the primary and continuation schools.

Considerable influence on industrial education will probably be exercised by the continuation schools of the German Empire. which have recently undergone a remarkable extension. These schools are also supported by public money. Their influence is naturally greatest in towns and states in which their organization, like that of Munich, provides not only drawing and commercial training, but also, by means of workshops, purely technical training as well. There can be no doubt that these continuation schools, which begin where the elementary school ceases and carry on the education of all youthful workers, whether apprentices or not, without exception, from their fourteenth to their eighteenth year, raise the standard of character in the masses, who without them would be mostly without secondary education. Thanks to these continuation schools, even the poorest and least favored by circumstances need not remain without further education. And thanks to the fact that the German continuation schools appeal to the vocation of the pupil and turn it to account as the starting point of education. every youthful workman can profit by them in his own particular calling. In states outside Prussia there is hardly a town without a compulsory continuation school. In the states of South Germany there is not a single exception.

I nevertheless attribute the lion's share in the rise of German industry and commerce to other causes. Possibly one of the chief of these is the German character, with its tendency to reflection, its thoroughness, tenacity, and capacity for subordination. Another cause is perhaps the German merchant, with his flexibility, his adaptability, and his zeal in the study of foreign languages and foreign conditions. A third cause may have been German poverty. Before 1870, when the German Empire became a great political and at the same time a great economic power, Germany was a poor country. Now nothing is better calculated to develop the innate forces of a people than poverty. The mental versatility of the Germanic races, Swedes, Norwegians, Scotch, and English, is possibly chiefly to be ascribed to the fact that they have been forced for thousands of years to strain every nerve in the struggle against fate. One of the best weapons that poor races possess for this struggle is their faculty of dispensing with things. The Germany of today has grown rich within one generation. It remains to be seen if it has strength enough, in spite of its wealth, to work and struggle in the sweat of its brow. History generally teaches the contrary. Yet our overpopulation and the tension existing

in all other civilized states may perhaps supply us with the same motives that we formerly owed to poverty.

One factor, however, has certainly been of eminent importance in the development of German industry. That is the scientific training of German engineers; in other words, the serious scientific spirit that rules in our German technical universities. In the great decisions of the battlefield it is the capacity of officers and leaders, with their military discipline and their iron sense of duty, that turns the balance of the day. A small band with the right man at its head may cope with ten times its number under an indifferent leader. The same thing applies to the technical officers on the field of industrial fight, The scientific mind that guides the German engineers, which grew out of the German middle schools with their rigorous expectations and their firmly established school discipline, is a chief factor in industry, equaled only by the earnest German scholar, who devotes his life to the investigation of purely scientific problems in the laboratories of our universities, without regard to their practical possibilities and with no concern for material profit. When Professor Baeyer in Munich spent years in the attempts to make artificial indigo, before these attempts were crowned with such brilliant success, it was neither use nor money that stimulated him, but only the great problem of transforming inorganic substances into a color that had hitherto been a product of vegetable vitality. And among other economic causes it is certainly this spirit of unselfishness, of devotion to an ideal aim, that has led our technical officers of industry to victory.

We thus arrive at the conclusion that real scientific culture in union with that discipline of character which teaches thoroughness and devotion to aims lying outside of ourselves are of no less importance for the industrial development of a country than technical training. Technical capacity alone will not suffice. In my opinion, the German day trade schools suffer from the fact that they pay almost exclusive attention to technical training. I have already repeatedly remarked that the courses of instruction in our technical day trade schools differ undesirably

from those of our eastern and western neighbors, in the small attention paid to civic education, which is to me identical with the formation of character. Among the answers given by German manufacturers to the inquiry of the German Committee for Technical Schools there is one which lays its finger on the essential point of all education:

A far more important problem for the machine-builders' schools than the exact amount of instruction in the single branches is to develop the character and intelligence of the pupils. Teaching suited to the future calling must be regarded merely as a means to this end. We shall always be able to work successfully with men of character and intelligence, whether their schooling has led them further in one branch of knowledge or another. Knowledge learned at school can never be more than the simple rudiments of the knowledge gained by experience in special work.

This lesson which a German machine-builder gives the committee must be taken to heart by the German day trade schools and all the trade schools of the world. Technical instruction must be regarded in the first place as a means of character-training, and it must be supplemented by other forms of instruction with a view to making it as many-sided as possible. In the life of great economic groups and of nations there are moments, and they are the critical moments, in which neither knowledge nor skill, but character, decides the day—character that has learned to regard its own egoistic interests as of no account when their sacrifice is demanded by the welfare of the community to which we belong, the welfare of the service that we have chosen, the welfare of the subordinates intrusted to our care.

# STATE, CHURCH, AND SCHOOL IN FRANCE III. THE SEPARATION OF CHURCH AND SCHOOL

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In the first two articles of this series we have studied the historical development of education in France, under the double aspect of the founding of a public-school system and the struggle of the liberal educators for the elimination of the century-long influence of the Roman church from the schools of France. We have marked the periods of progress and reaction in the struggle-the generous liberalism and confident rationalism of the fathers of the French Revolution, succeeded by the despotism of Napoleon Bonaparte; the optimistic educational radicalism of Guizot, followed by the infamous pact of Napoleon III and the clergy in the Loi Falloux; the renaissance of the free lay school in the Third Republic, combated by the church at every step, and charged with responsibility for all the sins of France. In the last two articles of the series we shall consider rather the actual working and theory of the lay moral instruction in the French schools.

To begin with some statistical facts. The first thing, perhaps, that strikes one in examining the curriculum of the public schools in France is the small space given to direct moral instruction, when one realizes that from the days of the Revolution down to the present the substitution of a lay morality for the ecclesiastical morality of the catechism and the sacred histories has been one of the chief aims, perhaps the chief aim, of the French educational reformers. In the lowest schools, the écoles maternelles or écoles annexes, there is no distinct moral instruction, but morale is bracketed with history for a half-hour a week. Naturally, all that is attempted here is an emphasis on the biography of good and patriotic men. Since 1882 the subject at the head of the curriculum for all the elementary schools (écoles

primaires) has been "moral and civic instruction." But though "moral and civic instruction" heads the curriculum, it receives only one hour out of thirty or more hours a week of instruction. It is on an equality with writing, geography, agriculture or horticulture, and singing in this respect.

In the secondary schools the curriculum is arranged in cycles. Two so-called preparatory classes and the eighth and seventh forms carry the child to about the eleventh year; a second cycle of four years (the sixth to the third form inclusive) covers the higher grammar grades, and a third cycle of three years (the second, the first, and the philosophy-mathematics forms) finishes the youth's preparation for the Bachelor's degree, which comes in France at the close of the preparatory-school work, and not at the close of the work of the university.

The transition from the second to the third cycle corresponds roughly to the transition from grammar school to high school in our system, although the point reached at the close of the second cycle of the French lycée is higher than that reached in our eighth grades. The analogy is rather in the fact that boys often drop out of school at this point to go into business. For the sake of those who leave the lycée at this point the curriculum has been so arranged that a fairly complete secondary education is gained: the last three forms go over the same topics as those of the second cycle, but on a much higher plane. This cyclic arrangement explains why we find moral instruction in the third and fourth forms of the lycée (the two highest forms of the second cycle), and again in the philosophy form (the highest form of the third cycle). It is that the boys may not leave school without having had at least two years of systematic instruction in ethics. As to the first cycle, no separate hours are assigned for moral and civic instruction, but, as the program announces, "this instruction is given in connection with French history and geography."

Lay moral instruction is obligatory in all the grades of the

<sup>&#</sup>x27;The coupling of these adjectives shows the aim of the moral instruction in French schools: it is everywhere directed toward forming a character capable of appreciating the republican idea of solidarity.

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écoles primaires. In the children's sections it consists of simple conversations on ethical topics, the learning by heart of short poems, songs, and stories with a moral point. Going into the elementary course the child of eight or nine years is taught to apply the precepts in personal responsibilities—his duty toward his schoolmates, the correction of uncharitable judgments and selfish passions, the elimination of childish fears, superstitious notions and bugaboos of all sorts. In the middle course, where the child is ten or eleven years old, personal relations are specially emphasized—the duties to one's parents and brothers and sisters, the proper attitude toward servants, the proper sense of obligation to one's masters at school, the duty to one's country, a reasoned and wise patriotism, the proper attitude toward society, toleration for differences of opinion, independence and bravery in one's own convictions, sincerity and truthfulness as the sole basis for permanent human association. "Throughout this course," says the Primary Syllabus of 1883, drawn up by Paul Janet, "the teacher begins by assuming the existence of conscience, of moral law, and duty. He appeals to the sentiment and idea of duty; he does not undertake to demonstrate them theoretically." In other words, there is no ethical instruction yet only moral instruction; for morals differs from ethics as the practice from the theory, or, in the happy simile of Professor Palmer, as carpentry does from geometry. In the higher course, the last two years of the école primaire, practically the same subjects are treated as in the preceding division but in a much more philosophical way, with inquiry into the sources and nature of our moral obligations.

Complete religious liberty was the ideal of the system of lay instruction inaugurated in 1880. Jules Ferry, one of the most indefatigable laborers for the new education, said in a speech in the French Senate (March 16, 1882): "If a public-school teacher should so far forget himself as to institute in his school a teaching hostile or offensive to the religious beliefs of any person, he should be as severely and as quickly reprimanded as if he had struck one of his pupils." Of course it is an impossibility to preserve such absolute neutrality if moral

instruction is introduced. With mathematics, the classics, history even, perhaps, such neutrality is possible. But ethics is a different matter. The religious belief of parents who maintain that there can be no morals without religion is outraged by the omission of God from the curriculum; and the religious or areligious belief of parents who maintain that morality is vitiated by religious doctrines is outraged by the insertion of God in the curriculum. The framers of the Syllabus of Primary Instruction tried to steer between Scylla and Charybdis by putting God in and neglecting him. Under section 3 of the middle course program we read:

Duties to God.—The teacher is not bound to give a lesson on the nature and attributes of God. The teaching which he should give to all indiscriminately is confined to two points:

First, he teaches his pupil that the name of God must not be taken in vain. With the idea of the First Cause and a Perfect Being he closely associates in their minds a feeling of respect and reverence; and he accustoms each child to feel this respect for the conception of Divinity, even when it is presented to him in a form entirely different from that of his own religion.

Afterwards, and without troubling about the special tenets of the various religious bodies, the teacher concentrates on making the child feel and understand that the first homage he owes to the Deity is obedience to the laws of God as revealed to him by his conscience and reason.

The textbook-makers have shown their embarrassment on the same question by generally devoting three or four pages only at the end of their manuals to a discussion of the theistic aspect of morals.

In the secondary schools, lycées and collèges, the moral instruction in the few grades where it is given does not differ materially from that in the primary schools, except for a rather astounding program in the last year (called the philosophical-mathematics form). The philosophical section of this form has a schedule of eight hours a week of philosophy, in which the whole ground of moral, mental, and emotional philosophy is covered. Aesthetics, psychology, logic, metaphysics, and ethics follow in rapid succession, each having approximately a two-months period. The ethics is scheduled for May and June. Just what idea of the vast subject of ethics can be given to

boys of seventeen or eighteen in two months at the close of a year filled with the hardest kind of work in thirty periods or so per week, is difficult to imagine.

And indeed if we turn from the curriculum to the criticism of the method and results of the moral teaching in the French schools, we are met with a not very encouraging response. Professor Farrington of the University of Texas, who has spent some years studying the primary and secondary systems of education in France, and whose reports on the subject in the Columbia Studies and in the new book recently published by Longmans, called Secondary Education in France, are, with the exception of the three volumes prepared by the French government for the Exposition of 1900, the best account we have of education in France, says in his study of the public primary-school system:

Since 1882 moral and civic instruction has headed the list of the required subjects in the elementary schools. The moral aspect, until that time completely obscured by the religious instruction, then for the first time took a predominant place in the work of the French schools. It represents the efforts of the people who had just forced religious teaching out of the program, to find an effective and at the same time non-sectarian means of developing the ethical side of the child's nature. Undoubtedly the previous religious instruction was entirely formal and empty, for it consisted merely in going through the various articles of the catechism without comment; but it is very doubtful if its present substitute is much richer in real content. It savors too much of the narrow-minded doctrines of our Puritan ancestors. I have visited many classes and talked with still more people on the subject, but I have yet to find a single class where the teacher ever rose to any ethical basis above the idea of reward and punishment. Whatever may be their real feelings in the matter, their teaching never seems to reach the point of doing right for right's sake.

This reminds one of Matthew Arnold's severe judgment, passed soon after the system of lay moral instruction was organized in the schools. In his Report on Elementary Education in Germany, Switzerland, and France, in 1886, he says:

All direct religious instruction, Catholic or Protestant, has been banished from the French schools, and the moral and civic instruction which is the substitute seemed to me, so far as I could judge from the manual of it which I perused, and the many lessons in it which I heard, of little or no value.

Matthew Arnold's judgment is open to the charge of having been made before the system had a chance to find its method and its men; and Farrington's, of being the judgment of a foreigner who, perhaps with the best of intention and closest observation, could not appreciate the French spirit. We have, however, the opinion of such a man as Jules Payot, rector of the Academy of Aix, whose textbooks on morals and whose constant devotion to the idea of lay education qualify him to pronounce on this subject. He says in the preface to his Cours de morale:

As to the moral instruction in our lycées and our schools, it is independent of dogmas to be sure, but it is not always independent of that state of mind which results from long traditions of dogma. Moral instruction is not yet "laicized." The courses given are simply sermons invoking the authority of a duty which is accepted without being reasoned upon. Like the old religious instruction, it commands but does not demonstrate. Do this, do that! it says. It gives not principles but a suite of episodes, cases, without a bond of union. It discusses duties to self, duties to neighbors, duties to family, duties to animals, etc., leaving in the child's head only a chaos of unorganized memories, which cannot exert a permanent, constructive influence on his conduct.

The moral teaching, in other words, in the judgment of these critics, not only is not organized to illustrate and further the development of a harmonious ethical theory, but it is not further connected with the other disciplines of the curriculum. It is a thing apart confined to its own hour in the program, whereas it should be the guiding idea in the treatment of history, literature, and the other subjects of the day. The ethics hour should be only, as it were, the laboratory period in which is prepared the moral yeast which is to inform and raise all the instruction of the school.

Of course there are educators who follow the opinion of Alfred Croiset, the venerable dean of the Faculty of Letters at the Sorbonne, in opposing any direct moral instruction in specific hours devoted to ethics lessons—as there are many American teachers who feel the same way. But on the whole the system of lay moral instruction is firmly fixed in the French schools, and the very hostility of the clergy to that teaching

(increasing as it constantly has in the last decade) will insure its continuance without other motive.

In fact, the whole question of moral instruction in France is so complicated with the great struggle between church and state which has raged with renewed energy in France since the days of the Dreyfus affair that we cannot touch an aspect of it (program, teacher, textbook) without coming immediately into the clash of the controversy. With us the public schools are generally free of the state and entirely free of the clergy. Their direction is, where the direction of the schools should properly be, in the hands of the community which they serve. In France the school, after long vassalage to the church, now comes into sudden vassalage to the state. It is inevitable that it should be the first prize of battle in the conflict between church and state.

Since the great educational laws of 1880-83, which freed the public schools of ecclesiastical control, the church has been pushed harder and harder by the state. In 1901 the congregations not authorized by the Associations Law were driven from France and their institutions of learning closed. In 1905 the hundred-year-old Concordat between church and state was dissolved and the public treasury was relieved of the payment of the salary of all the ministers of religion in the state. Deprived of the greater part of their own monastic schools, forced to support their priesthood and maintain their churches and cathedrals by private contributions, the Catholic church from the Pope down to the last member of the hierarchy registered its protest against the "strange and ardent fever of impiety which had seized on the men who direct the nation." "They wish." said Pius X in addressing a delegation of French bishops at the Vatican, in November, 1909, "to suppress even the very idea of Christianity, and under the pretext of shaking off the dogmatic and moral yoke of the church they acclaim another authority as absolute as it is illegitimate—the supremacy of the state as arbiter of religion and supreme oracle of the doctrine of righteousness."

The chief point of attack of the church today against the impiety of the state is the lay school.

Not content [writes a French bishop in complaining of the usurpations of the state] with attacking the church, our enemies now try to detach our children from our doctrine. Infidel schoolmasters, encouraged by the ministry in power, have tried to pervert the minds of these little children especially consigned to our care by the precepts of Christ. We accepted the law of neutrality (law of 1882); they have violated it. Partisan textbooks have been placed in the hands of our children. The Christian morals have been insulted and derided. The rôle of the church in history has been misrepresented and put in an odious light. . . . . Fathers of families have protested to their priests, and the priests have asked the bishops to see to it that the conscience of the child is respected in the schools.

The French bishops accordingly published a letter in September, 1909, in which they condemned scholastic neutrality and demanded that the Catholic children in the lay schools should be taught in a way to meet the approval of parents guided by the clergy. At the same time certain ecclesiastics attacked by name some of the authors of textbooks of history and morals used in the school. Cardinal Archbishop Luçon of Rheims was sued by two associations of teachers for his condemnation of the curriculum, and even the Cardinal Archbishop of Paris, Monseigneur Amette, was brought to court by Professor Aulard of the Sorbonne and Professor Debidour, whose textbook on history he had attacked as "inspired by the spirit of lying and deceit."

The church has left no doubt as to the object and grounds of its complaint. A little brochure published in Rheims, entitled Les manuels condamnés, places nine histories, four textbooks on morals and civics, and a collection of classical readings on the scholastic index, as tending to make the students free-thinkers and enemies of the church by "un enseignement athée, fait en haine de Dieu et dans l'ignorance ou le travestissement de nos meilleures traditions nationales." The condemned books are carefully analyzed, and the conclusion is, "Après un tel enseignement que reste-t-il de la morale catholique?" The authors would probably answer, "Rien, heureusement!"

In the middle of January, 1910, the French Chamber reached

<sup>\*</sup>M. Doumergue, minister of public instruction, had assured the teachers that he would resolutely defend the rights of the lay school, including the privilege which the masters had of selecting their own textbooks from lists approved by the state.

the discussion of the budget for the schools, and after an intense debate the government won a magnificent majority in support of the lay schools. The division seems to show that the bishops have overshot the mark in their attack on the curriculum and the textbooks and that the sympathy of the people (for the French deputies stand far closer to the people than do our American congressmen) is in favor of the continuance of the program of the eighties. It has made the clerical party cast about for other means of modification of the curriculum than attack and defamation. It has been suggested that a mixed commission of clericals and free-thinkers be appointed to revise or compile textbooks of history and morals which shall be, if not entirely acceptable, at least less offensive to the clergy. One hears rumors from Paris that the French bishops are trying to effect a rapprochement between the state and the Vatican, though the hardened free-thinkers speak still in Taine's phrase of the impossibility of "diplomacy with the immovable church." One of the clauses mooted in the rapprochement is the recognition of the Catholic schools (écoles libres) provided they are subject to the academy inspectors, i.e., that the state inspectors have the right to interdict the use of such books as they disapprove of and to reprimand or discipline teachers for offenses as in the state schools. The stone of stumbling in any scheme of reconciliation will be the refusal of the French government to deal directly with the Pope, and the refusal of the Pope to let the government deal directly with the French bishops. It is the old, old question, as old as William the Conqueror and Henry of Anjou, of the divided allegiance of the churchmen to the government at home and the government at Rome.

But whatever concessions might be made by either side through considerate diplomacy and a kindly spirit of common nationality, in the matter of the restitution of confiscated property, the recognition of state inspection, the enregistration of associations, the legalization of seminaries, it is impossible that the church could approve the lay instruction in morals. That is in direct contradiction to the Roman doctrine that morality is a corollary of revealed religion, impossible except on the basis of dogmas furnished to the believer through the mediacy of the priesthood. The criticism of the lay school and its moral postulates is therefore absolutely hostile in principle, destructive, and anathematizing on the part of the church. And as both the clergy and the free-thinkers are fortified in their conviction of the true basis and method of moral teaching, it is difficult to see any end to the strife between them—any higher unity into which their differences can be merged.

There is another kind of criticism of moral instruction in France-hopeful, constructive, reformatory-by the friends of the present system, who realize its defects and are laboring for its greater efficiency. The first and chief point in this criticism is that the lay morality of the schools lacks a philosophy, in other words, a reasoned ethics first comprehended and appropriated by the teachers, then mediated to the students in a way to make them progressively appropriate its theorems as experimental truth; a change of the point of view, as Payot puts it, which substitutes for the method of authority still in vogue (an inheritance from the old religious catechetic instruction) the constant appeal to experience, re-The non-efficacious sermon must vield to flection, reason. the scientific persuasion of a philosophy founded on the results of actual ethical progress in the last three centuries, under the régime of modern scientific thought. We must have a great dominating and orientating truth in our ethics teaching, and every lesson must be only a point of view, an aspect, a function of this truth, leading the student first by one path, then by another, to the rediscovery for himself of the truth which his teachers have grasped. The principle, fortified year after year by these new instances, will gain a momentum in the child's spiritual life; his mind will assimilate day by day facts, ideas, feelings, which it will organize under the direction of the ethical principle, and will grow on these nourishing elements, as the healthy plant grows in the sunlight, appropriating the nourishing properties of the soil.

The instructors in morals in the French schools have not

yet, in sufficient numbers, found that constructive principle of ethics. The lay school has been too much concerned to emphasize its neutrality, its intellectual liberty. But neutrality and liberty, valuable and indispensable as they are for the development of a sane morality, are as yet only negative terms: they do not denote an ethical principle but only prescribe the conditions under which the principle is to be developed. Of themselves they are as favorable to moral anarchy as to moral unity. The positive ethical principle must be found which shall replace the authoritative dogma of the church.

This principle the leaders of lay education in France find in the revolutionary philosophy which first made earnest with Aristotle's dictum that man is a reasoning animal. Reason and the republic are the bases of morals which they oppose to the revelation and hierarchy of their ecclesiastical opponents. And reason, though it rejects the notion of a divine, supra-human authority imposing itself by a consecrated priesthood through a mysterious process of grace, does not thereby abolish the obligation of authority. Nay, it makes the determination of moral authority doubly incumbent on the ethical philosopher. What has moral compulsion in it must be worshipful. The human reason is no more worshipful than any other tool or method. It is not in itself an ethics but only a gymnastics. It calls for the determination of an authority under which it can work in freedom and full efficiency—for the formulation of a scientific morality, replacing the old dogmatic morality, reaching the same profound depths of the human soul and responding to the same eternal needs of the individual and of humanity. The lay school must cease to put all its emphasis on the negative propaedeutic of neutrality and liberty. It must avow the great republican principles of human solidarity, human rationality, human capacity, not equal but far superior to the dogmatic and imperialistic teaching of the church. It must have no fear to show the same immense confidence in these principles to found a new society of justice and fraternity on earth that the church has in its dogmas to open to the faithful an eternity of bliss in heaven. It must assert the dignity of these principles

in the minds of the growing generation, supporting them not by the authority of the past but by promise of the future.

The task is tremendous which the champions of lay and moral instruction in France have assumed—but a nobler task would be hard to find in the whole range of human activities.

I have spoken of the destructive, annihilating criticism of the lay school by the clericals, and of the constructive, hopeful criticism or reformation of the lay school by its own devoted champions. In conclusion I should like to mention what appeared to me as a foreign visitor some of the faults in the French schools which, though not directly connected with lay moral instruction, seem to me inevitably to react upon the morale of the school and hinder the best application of ethical teaching. The first thing which appears to me to affect the whole moral tone of the French school is the overloading of the student with work. We have little idea in America of the severe and sustained work of the French schoolboy. In the program of 1902 for the boys' higher primary schools (for lads fourteen to seventeen) there are no fewer than thirty recitation hours a week scheduled in any grade, and in the écoles pratiques (under the Ministry of Commerce) I find the prescribed hours in the industrial department running up to fifty-one per week, or eight and one-half hours a day (excluding Sundays) of actually prescribed duties. And in addition to that the boy must find time for the preparation of his work. One must admire the power of concentration which these youths develop early in life and the courage with which they "scorn delights and live laborious days" in the early teens. Yet the effect on their physical and moral health is bad. They have no opportunity for leisurely reflection with perfectly aerated brains, and the pent-up spirit of youth often breaks out in wild excesses when the stern discipline of the secondary school is changed for the absolute freedom of the university.

The dull and strict formality of the discipline of the French school is another fault in the eyes of an American visitor. With us there is much good-fellowship and co-operation between scholar and teacher—a sort of mutual understanding,

without which it seems to me the work in ethical instruction of all subjects must be futile. In France one sees almost no personal relationship between teacher and pupil. Authority and obedience are the qualities noticed. I have often heard what seemed to me perfectly intelligent and justifiable questions or comments on the part of the pupils dismissed curtly by the instructor as intrusions on the time of the class, and groping answers, which needed only a little sympathetic guidance to a clear understanding of the question, treated with brutal sarcasm. The masters are masters in the classroom. They invariably have magnificent command of their subject (the French standards for the teaching license guarantee that), but they are so far above their pupils that they often find it difficult to come down to their level. Moreover the sensitive, mercurial Gallic temperament makes a student's botching of a lesson peculiarly painful to many of the instructors. One is often obliged to accuse them of failing in patience—that first and last requisite of the true teacher.

As one would expect from the overloaded programs and the stern discipline of the pupils, the competitive idea is dominant in the French schools. Perhaps no other feature of school life in France militates so strongly against a rational and human system of ethical instruction, or at least the application of such instruction to the daily school life, as this emphasis on rewards and punishments. The student is compassed round about with percentages. Even the teachers are rewarded by bronze medals. silver medals, violet ribbons, and yellow ribbons. Prizes are given by the state for all sorts of proficiency and accomplishments, even to the encouragement of vaccination among the children. In the écoles primaires the student takes home a report each day to be signed by the parent and returned the next morning. The mind of the boy is constantly fixed on this pedagogical barometer. At stated intervals the principal of the school appears before each class and makes his comments on the report books. He reads out the name of the boy, who rises respectfully and quakingly to his feet. Then follows an outspoken criticism of the record, often with severe and sarcastic

denunciation enough to kill any courage in the boy's soul, sometimes with laudation enough to make him a conceited prig-in either case scarcely conducive to the moral development which the week's ethics lesson had tried to foster. This competitive aspect of school life extends to the homes. The Revue pédagogique a few years ago published the results of an enquête or questionnaire sent to the schools of one of the French departments. Pupils to the number of 27,000 in the intermediate grades of the primary school (boys and girls eleven and twelve years old) were questioned, and over 70 per cent of them (15,-000 boys, 12,000 girls) replied that they were rewarded by their parents when they got good marks and punished by them when they got poor ones. The idea of reward and punishment, which so completely dominated the old catechetical moral instruction in the French schools, has had its lasting effect on the character of the people, and the new lay morality founded on the reasonableness of the good, the good for its own sake and as its own reward, has a persistent enemy to fight in this mercenary conception of morals.

Finally I would mention what struck me as a great obstacle to the inculcation of a fine ethical spirit in the French schools in the lack of any aesthetic helps to the cultivation of ethical feelings. The French classrooms are bare and forbidding: a little table, for the master, benches for the boys, windows generally dingy, an old stove in the corner with its uncertain pipe meandering diagonally across the room suspended like Mohammed's coffin half-way between floor and ceiling. I never saw a picture in a French classroom or a bust or statue in the corridor. Even the necessary helps to study, good maps, globes. charts, are almost entirely wanting. The attempt of a Minister of Public Education some ten or twelve years ago to supply this defect was as pathetic as it was sincere. "The school," wrote Minister Leygues, "is not merely a place of instruction for youths from six to thirteen years of age; it ought to be a homelike place where the adult could return to the scenes of his youth. I desire that these centers of friendship and comradeship should be decorated in a manner appropriate to their

purpose." But in proof of the sincerity of this very proper sentiment all M. Leygues could do was to distribute among the schools of the country a number of colored railroad posters, representing in brilliant blues and reds the attractive scenery of the Juras and the Riviera. When one steps from the portals of a public school into a photographer's shop filled with the most beautiful photographs, carbons, and etchings of the choicest works of art in the world, one wonders why some little part at least of the millions of francs which the state spends each year in the encouragement of art should not be put into the beautification of the public school.

The best of the French educators are alive to the imperfections and inadequacies of the lay school today, but they know better than any casual visitor to France or even than any careful reader of the century-long struggle for the public lay school what difficulties in the temper and inheritance of the French people, in the long monopoly of education and charity by the church, in the divided political councils and unstable ministries. confront the man who is laboring for the realization of the revolutionary program of a solidarity of Frenchmen founded on reason and democracy—the spiritual and the political rights of man. What these champions of lay education have done in the last thirty years is remarkable-perhaps the most remarkable educational achievement in modern history. The courage and constancy with which they have performed their task against discouragement from the state, denunciation from the church, and general indifference from the public is the best guarantee of the accomplishment of what yet remains to be done to make the lay school the most powerful ethical factor in the French Republic.

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### THE PRESENT STATUS OF AGRICULTURAL EDUCA-TION IN PUBLIC SECONDARY SCHOOLS OF THE UNITED STATES

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The contrast between the present condition of agricultural instruction of secondary-school grade and its status so recently as three years ago is no less a matter of extent than of general efficiency. The inquirer at that time would have had trouble in even locating the few schools that were groping their way out of the traditional gloom in an attempt to effect some adjustment of their work to the rural community needs. popular magazines still "discover" one of these schools occasionally. Three years ago many state departments of public instruction and agricultural colleges were unaware of most or all of the high schools in their own states attempting to introduce agricultural work. Where few of the colleges in 1908 were able to furnish more than one or two, if any, names of graduates who had gone from the agricultural courses into teaching, a large number now maintain departments of education and extension work. Over eleven hundred students were registered in 1909 for work in nature-study and agriculture in twenty summer schools conducted by state universities and agricultural colleges.

In a numerical way the rapid strides made are well shown by the following estimates of the number of public high schools, both general and special, teaching agriculture. During the school year 1906-7 the number probably did not exceed seventy-five or eighty, even including those high schools maintaining training classes in which agriculture was taught. In 1907-8 there were probably between two hundred and forty and two hundred and fifty. In 1908-9 the total must have risen into the neighborhood of five hundred, while it is not unreasonable

to suppose that the thousand mark was nearly if not quite reached in the past academic year. Unwarranted claims have occasionally been made for individual states and for the country at large which materially shrink when checked up with detailed information from individual principals regarding the amount and character of the recitation and laboratory work. Some reports show that the subject is not taught at all; others, that it is taught merely as incidental to some other science; and many schools evidently teach it as mere bookwork, without even window-sill or tomato-can experiments.

Perhaps a better index of real progress is the growth in the number of schools having an agricultural course of two or more years. In 1906-7 there were about fifteen such schools, mostly of the special sort. Since then the secondary schools giving this more extensive work have differentiated into three rather distinct types: first, the public high schools and a very few academies functioning as local high schools, all depending entirely on local support; second, schools receiving state aid for their agricultural departments but offering general high-school courses; third, schools supported wholly or in part by the state, with curricula centering around the industrial work. The figures given below for the year 1909-10 follow this classification and probably include most of the schools properly belonging here.

I. Over thirty are high schools or academies depending on local support or patronage. These are distributed among fifteen states, the largest number in one state, seven, being in Michigan, with California and Tennessee not far behind. Eight or nine are county high schools, as many are village schools, while the others are township high schools or academies.

2. At least forty-six schools receive state aid for agriculture, but also offer general high-school work. These usually give more or less classical work, but sometimes call themselves "agricultural high schools." The schools of this second class are found mostly in five states: nine in Alabama, seven in Louisiana, six in Mississippi, ten in Minnesota, and ten in Virginia. Those in Alabama are maintained for congressional districts,

those in Louisiana and Mississippi for counties, and those in Minnesota for cities and villages. Some of the Louisiana schools are probably developing into schools of a more strictly agricultural type than are others.

3. The strictly agricultural secondary schools, existing apart from the agricultural colleges and more or less independent of them, number between forty-five and fifty, according to how many of those scheduled to start this year are in actual operation. Of these, Georgia has eleven congressional-district schools; Michigan has one county school, and Wisconsin has seven; Oklahoma has a school in each of her five judicial districts, about the size of her congressional districts, and one in the "pan-handle"; while the other schools, mostly "state agricultural high schools," do not minister to any definite districts. Arkansas is opening a school in each of the four quarters of the state. These divisions are, of course, larger than her seven congressional districts.

Information concerning the rural or semi-rural high schools offering agriculture has not been generally accessible and has been difficult to gather. These schools offering courses of one year or less now probably number between eight and nine hundred. Complete data on the distribution of most of the high schools with agricultural courses in 1908-9 show that somewhat less than one-half were maintained by villages of less than 4,000 population, that about one-fourth were township high schools, and that the rest were almost equally divided between counties and cities with a population of 4,000 or over. Between two-thirds and three-fourths of the schools were in the North Central states, and almost a fourth in the South Central states. with a very sparse distribution among the Atlantic coast states, both north and south, and in the far West. By far the largest number of these schools were in Nebraska, Ohio, and Missouri.

The term "agricultural high school" is no safer guide to the real nature of many of the schools using it than are the titles "college" and "university" in the case of many institutions of dubious character using them. The nearest approach to

an official pronouncement is the stand taken by the American Association of Agricultural Colleges and Experiment Stations, that an agricultural high school should be distinctively of secondary-school grade, including no grammar grades, that it should require all students to spend at least one-fourth of the entire time on agriculture (or home economics for girls), and that it should make definite provision for practice in farm operations. Several institutions styled agricultural high schools have required Latin of all students and have offered agriculture as an elective. Certain district agricultural schools of Alabama have recently enrolled more students in the elocution, music, and commercial departments than in agriculture. Mississippi county agricultural school organized a little over a year ago listed Greek among the second- and third-year studies in its prospectus. The Virginia schools are really threefold, with definitely separated agricultural, college preparatory, and teachers' training departments; but little uniformity has been observed in the designations adopted in the school catalogues. On the other hand, many public high schools maintained by local communities have experimental plots, orchards, and greenhouses, but advertise these advantages without calling themselves agricultural high schools, and without seeming to belittle the fact that they offer general courses. Notable examples are the Town of Petersham high school in Massachusetts, the John Swaney school in Illinois, and the Beaverhead county high school in Montana.

The county is the largest unit supporting the general or non-special high school. It is the smallest unit supporting the special school. The other agricultural schools are maintained by direct state appropriations or by the division of certain revenues, such as tag and inspection fees. The congressional district is not a political division for school support but for the determination of the number and distribution of the schools. As a rule only the county and village in which the school was located contributed any considerable amount to the initial cost of establishment. The special schools in the North exist near well-established general high schools. Those in the South, as

a rule, do not. The Alabama schools, the oldest of the special schools, have for many years functioned as the general high schools for their respective towns and counties more than as agricultural schools. In Virginia, an established institution in the congressional district has usually been designated to receive the funds appropriated to aid the agricultural and teachers' training departments. The governing boards of the larger district agricultural schools have been appointed by the governor, while the county boards have always been chosen by the electors or county school boards.

It is difficult to foresee whether the county or the larger district will finally prove the more popular political unit for special schools. Wisconsin and Alabama were the pioneers in the two experiments. The example of the former has been followed by Maryland, Michigan, Louisiana, and Mississippi; that of the latter by Arkansas, Georgia, and Oklahoma, the Virginia schools hardly falling in this category. State-aided schools for whites, not ministering to particular sections and not attached to agricultural colleges, exist in California, Georgia, Massachusetts, Minnesota, and New York. Idaho plans the establishment of two schools. A large majority of the state normal schools are also giving more or less instruction in agriculture.

Probably a majority of the men of prominence who have participated in recent discussions have favored the larger unit on the ground that counties have not the means to furnish such an expensive plant as the special school should possess, and also that the enrolment would not justify its existence. We should not, however, overlook the important factors of relative wealth and density of population (by which in the two Southern states is to be understood the white population). The average enrolment does not seem to differ greatly between the two groups—no more than within each group. It must be remembered also that the congressional-district schools often have no competing general high school. The Oklahoma schools exceed the others in attendance and equal those of Wisconsin in average number of industrial instructors, but do not equal them in the pro-

portion of the students' time devoted to industrial work. The value of the plant of the northern county schools, ranging from \$40,000 to \$75,000, equals that of many of the Georgia properties, and far exceeds the value of most of those in Alabama.

While two or three counties might jointly support and patronize the Wisconsin schools without necessitating much enlargement of the plant except as to dormitories, a much larger proportion of the students would have to live away from home. A year ago Georgia headed the list with 77 per cent of students living away from home. The lowest percentages were in Michigan, 20 per cent, where a large majority seem to be girls from Menominee taking domestic science, and in Alabama, 50 per cent, where the schools also serve as local high schools or finishing schools.

The special agricultural schools of Michigan, Minnesota, and Wisconsin have a two-year course, presupposing an eightgrade common-school course, although no pretense is made of rigidly adhering to this standard in the case of the older students. Nearly all the "short-course" students are past school The academic work ranges from no work unrelated to agriculture except civics and United States history, in the school at Menominee, Michigan, to ten periods a week in history, English, and mathematics, in the Wisconsin schools. Even here the agricultural work takes 71 per cent of the total time of recitations and practicums, showing how intensely vocational are the activities of this group of schools. The course in the district schools of Alabama, Georgia, and Oklahoma is one year longer, although the inclusion, by the schools of the Southern states, of the eighth grade, consisting largely of the common branches, makes it seem to be a four-year course. About onethird of the district schools offer a general course including ancient languages. The Alabama students spend one-fifth of the classroom time on agriculture. Including farm exercises, the industrial work employs over one-fourth of their time. One-third of the classwork in the Georgia schools is agricultural. Including laboratory, shopwork, and field experimentation, we account for two-thirds of the total time in the printed schedule. Each student must give in addition nine hours of labor a week. The industrial work in the Oklahoma course of study seems to provide for a little more than half of the students' time. The county schools of Louisiana and Mississippi are still so largely in the formative state that they cannot easily be included in these comparisons. The work of instruction by no means measures the scope of the usefulness of the schools. Institutes, conventions, individual advice, and the testing of seeds, milk, and fertilizers are some of the many useful services to the community.

In many respects the study of the agricultural movement in the general high schools, especially those of non-urban communities, is even more interesting than is that of the special, or technical, schools of agriculture. The closeness of the former to the home life of the pupil and patron, and the limitations under which the latter must always work, give a certain value to the work of the public high school independent of the disparity between the size and completeness of the plant in the two cases.

The United States Department of Agriculture received reports for the year ending June 30, 1909, from 309 high schools having a total enrolment of 54,700, and 9,500 in the agriculture classes. This subject was taught for but one year, or a part of a year, in 213 of these schools. The facts given below are based on my own returns from 188 of the smaller schools, enrolling 15,243 pupils and serving a population of over half a million. Over one-third of the pupils were from farm houses, and about one-fourth were studying agriculture.

A number of persons prominent in official and university circles have strongly maintained that agriculture should be placed in the third or fourth year, after the other sciences. In over half of the 145 schools offering agriculture for one year or less, and furnishing comparable data, the pupils may or must take the subject in the first year, and they may or must take it during the second year in nearly all the other schools. In only 69 schools are first-year pupils excluded. The subject is

required or optional after the second year in 49 schools, but in only eight schools are no students permitted to take agriculture until the third year. In many schools giving the work but one year it is open to students of two consecutive classes, due to a doubling up of classes to economize teaching force.

If such a course of a year or half a year be given in the later years it may be made rather intensive and technical with a strong vocational trend. It may also be made a synthetic study with a distinct cultural aim. But the figures just cited indicate that in prevailing practice the subject is placed in the lower part of the high-school course, where no such preliminary preparation can be given by the sciences in general. It must of necessity therefore take on more of the nature of an introduction to science—a term which has many advantages over that of "elementary science." In this rôle agriculture bids fair to compete successfully with physical geography, which has not entirely succeeded in meeting the expectations raised by its advo-Those dissatisfied with physical geography, as represented by most texts, feel that it furnishes at best a forced introduction to anything but geology and a very limited set of physical principles. Elementary agriculture makes a very definite application of the same and other physical principles to the pupils' environment, introduces much of the chemistry of everyday affairs, and takes up a few topics of animal life as intensively as the most exacting course in high-school zoölogy. It does not blush at lifting bodily no less important physiographic topics than the nature and origin of soils, and it threatens to take over most of the half-year botany course of the lower high-school grades except plant analysis. Elementary agriculture does not hesitate to borrow from the various sciences, but makes the direct connection with life that many of these. because of the fatuous shortsightedness of their sponsors, have failed to make. Agriculture in the lower years of the general high school can hardly hope to furnish the degree of vocational training that it might in the corresponding grade of a special school. It may not possess either the technical or cultural value that it would if given in the more advanced years. For a

course introductory to science in general possibly the very name agriculture is not the most desirable, but it does furnish a thread of continuity which the proponents of physical geography hold with some justice to be lacking in most proposed courses in so-called elementary science.

The number of weeks devoted to agriculture in 171 schools offering it for one year or less and reporting on this point varied from 6 to 40, with a strong central tendency at 18, the number of weeks in 82 schools. In some respects this leaning to the half-year course is unfortunate, because on the observational side agriculture is essentially a seasonal study and should extend through the entire school year, even if the total number of recitations remains the same. The number of minutes per week in 141 schools, including some with larger courses, varied from 20 to 600, with a strong mode at 200, that is, five recitations of 40 minutes each. This makes no provision in school hours for additional laboratory work, and probably includes no double periods. Some other investigations of the time given the standard sciences in schools of the same type indicate that none of the sciences fare much better. However, most purely agricultural experiments require to be observed on successive days rather than continuously through two successive periods. A most profitable use of part of the recitation time would be the discussion of "home projects" carried on under the instructor's supervision. Unfortunately there is little evidence that such work has been tried to any great extent.

It is not surprising to find that 81 schools report the subject as required and 63 report it as elective; for small schools have seldom worked out the problem of the elective or optional system. With a teaching force of only one or two teachers attempting to cover a four-year course, the set curriculum seems to offer the line of least resistance.

The relation of agriculture to the other studies in the curriculum is strikingly shown by the fact that 29 out of 136 schools report no other science preliminary to agriculture, 70 report one, 26 report two, and 11 report three. The same schools report the agriculture preceded by physical geography 72 times, by botany

33 times, by physiology 17 times, by physics 16 times, by chemistry 6 times, and by others 11 times. The above facts clearly show that current practice must radically change before agriculture can be presented either in a highly technical or in a synthetic manner. Besides such a procedure would be out of the question in many schools included above that have only a three-year curriculum. Another possibility that will probably meet with little favor with those under the domination of the colleges is the idea of such courses in physics and chemistry as are within the comprehension of high-school students of the second year, courses that are more phenomenal and less mathematical than the present conventional courses.

A fair measure of the efficiency of the instruction is furnished by the amount and character of experimental and observational work. Over one hundred schools reported doing practically all the experiments in the text or manual used. Half as many carried on additional experiments, while about the same number reported "a few" experiments, no laboratory work, or ignored the question. The slight preponderance of demonstrations over work by the pupils individually or in groups is natural, considering that agriculture is being introduced most rapidly into schools with small equipment. This supposition is borne out by the reports of 56 schools on expenditures for agricultural apparatus, 34 spending each \$25 or less. Eight schools spent nearly \$000 in all for gardens and other out-door work, and 50 spent over \$2,100 for in-door work. Gardens were reported without qualification by 28 schools, twice as many reported home gardens in connection with school work, a few carried on some irregular work and 160 either reported none or did not give data. We usually think of gardens carried on in connection with the work of the grades and in cities, but this work is done entirely by pupils in high schools and, for the most part, in the country or villages. It is evident that the purpose in the two cases is very different. The high-school pupils do not have to garden to see "how things grow," but do it to carry on definite scientific experiments.

Most of the textbooks used were intended by the authors

for use in the grades and have been used in the high schools for want of something better. The pupils themselves have been reported a number of times as regarding these texts as infantile. Fortunately three or four books have appeared rather recently that are better adapted to high-school use, the latest having been written for students of the upper classes with some preparation in science.

The efficiency of the instruction is necessarily dependent in a large degree upon the qualifications of the teacher. In a large number of instances the superintendent handles the subject either because his science teacher cannot, because he takes the odds and ends, or because he is the only man in the school. The last alternative is evidently the reason in almost two-thirds of the schools reporting. A few principals seem to be teaching it on account of training received in agricultural colleges. Assistants in only 11 high schools were reported as having had such preparation. A very large proportion of the teachers had had neither college science nor practical farm experience. Of 170 teachers reporting their qualifications, about 45 per cent had farm experience, almost 40 per cent had college science or agriculture, and a few others normal-school courses, while nearly 20 per cent claimed no fitness or failed to report. About one-half of the teachers are not college graduates, and almost a third are neither college nor normal-school graduates. These facts, when known, cannot but influence the action of the large number of colleges and universities at present showing a disposition to credit agriculture for entrance when the course pursued by the student shows evidence of being on a par with other acceptable science work.

Notwithstanding the large proportion of teachers who are superintendents or principals, only 10 per cent teach less than three classes besides the one in agriculture. About one-third are responsible for three or four other classes, and five reported from 15 to 18 other classes. A dozen spend seven to eight hours a day in the schoolroom. Naturally little time is left for trips to nearby fields, stock farms, or creameries.

Of the 170 teachers just mentioned, 120 are in Missouri,

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Nebraska, and Ohio. The salaries are lowest in Missouri, where 90 per cent of the classes in agriculture are taught by executive officers, and highest in Ohio, with 85 per cent of the classes so taught. Nebraska pays a medium salary, though nearly half of the teachers of agriculture are women, and though three times as many women teach this branch as in the other two states combined. The average for the three states is about \$700, with an average deviation of about \$150. As many schools pay less than \$655 as pay more. This is nearly \$250 less than the salaries paid to 272 graduates of agricultural colleges from 1907 to 1909 inclusive. The demand for trained agriculturists to fill positions in colleges and experiment stations, in the state and federal agricultural service, in the rapidly increasing special schools, and in commercial lines, is sufficient to enable these graduates without experience to command a much higher salary than our present teachers with often several years of experience. The salaries paid trained agriculturists in more than forty general and technical high schools range from \$600 to \$2,000 a year. Twelve receive \$1,000 each, six receive \$1,200, and twelve others are paid the higher salaries. Probably eight of the \$1,000 men are principals, as are all but three of the remaining eighteen. The rural high school's only hope of securing a teacher for the agriculture lies in electing as principal an agricultural-college graduate who is willing to accept the place for a year or two to do his "practice teaching." Unless the temper of the rural taxpayer greatly changes, agricultural instruction in his high school must be conducted for many years to come by teachers whose only preparation, aside from some experience as a boy on a farm, or some study of natural sciences, must be picked up at random and in the summer schools.

### EDITORIAL NOTES

At the Indianapolis meeting of the Society of College Teachers of Education, held on March 3, 1910, the writer made some suggestions concerning

THE SOCIETY OF COLLEGE TEACHERS OF EDUCATION ADOPTS THE "SCHOOL REVIEW" AS ITS ORGAN the desirability of providing for the establishment of a regular publication by the society, which should include the annual papers of the society and other important monographs that might be prepared by members of the society. It was believed that by this means the deliberations of the society would develop a regular channel of publication and be

of much larger service to the cause of education. Up to that time no regular provision has been made for the annual papers, and they had appeared in various journals; one year they were published by Teachers College, Columbia University, another year by the *Journal of Pedagogy*, another year by the *School Review*; and for two years they were published independently by the society. It was thought that by providing for a regular publication including a series of monographs a way would be opened for publishing much technical matter and papers of a length which could not ordinarily find a place in the regular educational magazines.

At that time a suggestion was offered to the effect that instead of developing an entirely new avenue of publication, it might be better to take advantage of some avenue already established. The proposition was made that the publication of the papers and proceedings of the Society of College Teachers of Education be undertaken by the School Review under conditions similar to those which now obtain for the publication through the University of Chicago Press of the papers of the National Society for the Study of Education and some other scientific organizations. The society requested Professor Judd to present in writing to the Executive Committee the exact details of the plan of co-operation proposed. Accordingly a detailed proposition was placed in the hands of the members of the Executive Committee before the Mobile meeting. This plan seemed feasible to the Executive Committee, and it was therefore recommended to the society at the meeting in Mobile on March 24, 1911. After some discussion the plan as a whole was accepted by the society and the Executive Committee was authorized to work out further details and put the plan in operation.

The plan is an agreement which in essence provides that the School Review shall be the official organ of the Society of College Teachers of Education. The School Review is to be managed by a joint board of editors composed of the University Editorial Committee, and five members to be elected by the Society of College Teachers of Education. The University

of Chicago will continue to be responsible for the printing, distribution, and financial obligations of the School Review and will also assume the same relation to the annual monograph published by the society. The only financial obligation resting with the society will be the payment of annual dues of \$2.00 per member; \$1.50 of this amount will be paid to the School Review, in return for which each member will receive the School Review and the annual monograph of the society. The remaining \$0.50 will be retained in the treasury of the society. The University of Chicago now maintains the Review with an annual subsidy of somewhat more than \$1,000.00. Should any revenue be derived from the annual monograph and the special monograph series in excess of the cost of publication and distribution, it is agreed that such surplus shall be devoted to the improvement of the School Review. The special monographs, to be known as "The School Review Monographs," which will be published from time to time, will be furnished to members of the Society of College Teachers of Education at a 25 per cent discount from the published price.

A joint meeting of the Editorial Committee of the society and representatives of the School Review was held in Chicago, March 22, 1911. The present Editorial Committee of the Review consists of Professor Gore, Dr. Freeman, and Principal Johnson. The Executive Committee of the Society of College Teachers of Education appointed the following representatives of the society to act as the editorial representatives of the society: Professor Holland, of the University of Indiana, one year; Professor Hanus, of Harvard University, two years; Professor Bagley, of the University of Illinois, three years; Professor O'Shea, of the University of Wisconsin, four years; Professor Bolton, of the University of Iowa, five years. Upon the recommendation of the members of the society, Professor Gore was continued as managing editor. This board will have full power to determine the policy of the Review and the monograph series, and to determine upon the matter for publication.

It is the writer's confident expectation that the conditions of the present arrangement will stimulate the publication of important contributions to education, and he believes that the Society of College Teachers of Education is exceedingly fortunate in securing on such liberal terms a well-established channel of publication and distribution. As has frequently been pointed out, many of our monographs in America are published in such a way as never to become known to the public for whom they are of interest. We need a concentration of publication in well-established channels instead of a multiplication of new periodicals and monograph series established by various societies and institutions. The authorities of the University of Chicago are certainly very generous in sharing the management of the Review with the society and in promoting publications in the interest of the scientific study of education.

The editors of the School Review invite the members of the society and

others who may know of suitable material, either for the columns of the School Review or for the monograph series, to bring such material to the attention of the editorial board, who will pass upon its availability for publication.

FREDERICK E. BOLTON

A conference on the moral phases of public education was held at Teachers College, New York, on February 15 and 16. The conference was called by the Council of the Religious Education Association, THE MORAL-EDUCATION and followed immediately the annual convention of that asso-CONFERENCE ciation in Providence. The attendance, which was by invitation, reached about one hundred, representing the East, the Middle and Far West, and the South, and comprised presidents of colleges, professors of education and ethics, superintendents, principals and teachers of public and private secondary and elementary schools, and other social workers not directly connected with the schools. Twenty reports on the conditions and methods employed in colleges, normal schools, and public schools of thirteen states, filling one hundred and fifty-eight printed pages in Religious Education, the journal of the Association, had been placed in advance in the hands of the members of the conference. These, "taken as read," formed the basis of most of the discussions, and made this a real conference, not a gathering for the reading of papers. There were five sessions, at each of which a special aspect of the general subject was discussed: (1) legal provisions for moral instruction and training in the various states; (2) the training of teachers for the work of moral instruction and training; (3) the practice of the schools in the different states, with special reference to new experiments; (4) a comparison of methods of moral instruction and training; (5) what advance steps should now be taken?

The following resolutions, adopted at the closing session, summarize the conclusions of the conference as to the present status of moral education in the schools and the further steps which it is desirable at this time to take:

"We, the members of the Conference on the Moral Phases of Public Education, believe that the *moral aim*, i.e., the formation of character, should be treated as fundamental in all education; that morality has a positive as well as a negative content; that the former should receive primary emphasis; that it consists, in one aspect, of promotion of the common good, in another, of the attainment of individual character.

"We believe that the personality of the teacher and the general organization of the school are primary agents in the development of character.

"We believe that progress has been made in recent years in the development of character through public education; that such progress is forcibly evidenced by the diminishing significance of punishment as an element in the school life of the present; by the improved organization of the school whereby initiative and therefore independence on the part of the pupil is much more fully secured than formerly; by the development through instruction of the taste for good things to an extent far beyond that which prevailed a generation ago; and finally by a remarkable provision for the physical and thereby the moral welfare of the child.

"In spite of this progress, we believe that still more systematic efforts on the part of the school for the development of moral character are imperative. With this fact in mind, we make the following recommendations:

- 1. "That teachers be impressed with their responsibility for a much greater use of their personal influence with pupils through personal contact and sympathy than is now customary.
- 2. "That the teacher's opportunity for personal contact and influence with the children be enlarged (a) by reducing the number of pupils assigned to a teacher, (b) by eliminating the obsolete and less vital materials from the curriculum, (c) by permitting the teacher greater personal choice in adjusting subject-matter and method to the individual needs of children, and (d) by modifying the prevalent character of school supervision so that the subtler personal influences of good teaching may be more completely taken into account.
- 3. "That an increased effort be made to secure the moral values of the content of all subjects in the curriculum so that moral instruction may be enlivened, appreciation awakened, and personalities enriched.
- 4. "That direct moral instruction, varying in content according to conditions, systematic or otherwise according to personal preference, be employed as a means of moral education, with the special object of developing the power and habit of moral thoughtfulness.
- 5. "That school and community activities, such as plays, games, festivals, student organizations, social intercourse, social service, etc., be more extensively yet vigilantly used as a means of moral growth.
- 6. "That the foregoing five recommendations be considered as applying in full to institutions for the training of teachers, such as normal schools and colleges, recognizing that beyond question the *practice* touching these demands followed by such institutions will largely determine the extent to which such demands find realization in the public schools.
- "That, in addition, courses in personal and social ethics, moral instruction and training, constitute a prominent part of the curriculum in such institutions.
- 8. "That since the improvement of character demands that education inside the school go hand in hand with efforts for social betterment in the community outside, every opportunity be taken to arouse in teachers and normal students an intelligent interest in these vital facts by means of

courses in educational sociology and active participation in philanthropic and civic work.

9. "That we approve of the greatly increased emphasis in the teaching of the biological sciences laid upon personal and institutional hygiene, and, in particular, upon sex-hygiene and eugenics.

10. "That it is the sense of this conference that the Council of Religious Education be requested to call another such conference as soon as may seem advisable, and that at such conference the relation of the content of the curriculum to the practical life of the pupil receive special consideration."

The significance of this conference is in the type of men who composed it and in the method by which the material was prepared and presented, not in its immediate results. From most of the statements con-SIGNIFICANCE tained in the resolutions adopted there is likely to be no OF THE CONFERENCE dissent. With the recommendation for direct moral instruction, however, there will be much dissent on the part of those most interested in moral instruction. It is doubtful whether teachers competent to give moral instruction may not do this as effectively through informal means; there can be little doubt that such instruction attempted by the incompetent would be futile if not harmful. The real significance of the conference is that it marks a beginning of a scientific study of the problem of moral education through the schools. Further conferences will discover what, if any, permanent value has resulted.

FRANKLIN W. JOHNSON

### **BOOK REVIEWS**

The Making of a Trade School. By MARY SCHENCK WOOLMAN. Boston: Whitcomb & Barrows, 1910. Pp. iv+101. \$0.50.

This volume gives an interesting account of the first experiment in the United States to deal in an adequate way with the problem of furnishing vocational training and guidance to children destined to enter industrial life, otherwise wholly unprepared, at the earliest possible age.

The aim of the school is frankly stated to be the giving of help to the youngest wage-earners, but its ideals are of considerable breadth. They are to demonstrate to the community what education is needed for "the lowest rank of women workers," to train a girl to become self-supporting and adaptable, "to understand her relation to her employer, to her fellow-workers, and to her product," and to value health and moral and intellectual development.

The necessity for this effort was found to be the unfortunate social and economic conditions and especially the lack of opportunity for progressive work. "After several years spent in the market" the girl was found to be little better off than on her entrance into industrial life.

After investigation trades were selected in which are used the sewing machine (foot and electric power), the paint brush, paste brush, and needle. In organizing instruction all unnecessary waste was eliminated, short, intensive courses were planned to give knowledge and skill in the technical aspects of the selected trade and to develop mental alertness on the part of the worker. It has been observed that "the academic dullness which is shown at entrance comes frequently from lack of motive in former studies." The fundamental importance of health and the value of trade art as a help to progress are given special emphasis.

The supreme value of its trade-order business, as an educational asset, is shown in the following quotation: "It provides the student with adequate experience on classes of material used in the best workrooms; these girls could not purchase such materials and the school could not afford to buy them for practice. The ordinary conditions in both the wholesale and the custom trade are thus made a fundamental part of instruction. Reality of this kind helps the supervisor to judge the product from its trade value, and the teaching from the kind of workers turned out. Through the business relation the student quickly feels the necessity of good finish, rapid work, and responsibility to deliver on time. The business-like appearance of the shop at work on the orders and the experience trade has had with the product have increased the confidence of employers of labor in the ability of the school to train practical workers for the trades. . . . . The business organization and management required in the adequate conduct of a large order department can itself be utilized for educational purposes."

A chapter devoted to representative problems makes an illuminating analysis of the difficulties which must be met and solved by those organizing schools

for workers in the lower grades of industry. While the instruction must be direct and specific some preliminary general training is needed and work intended to awaken vocational interests should also be provided. The author believes that all this might and should be given in the public elementary school. Other difficulties are the keeping of the school organization flexible and sensitive to ever-changing trade conditions and in "close contact with industrial and social organizations of workers in settlements, clubs, societies, and unions, that all phases of the wage-earner's life, pleasures, aims and needs, may be appreciated." There is the difficulty of securing suitable teachers, and adequate financial support, and finally of working in harmony with the ideals of organized labor.

The present quarters and equipment represent an investment of about \$200,000 and the 1908-9 budget was \$49,000. "At the beginning of 1908 there were 254 students in the school; 689 were registered during the year, making a total of 943 girls."

The tuition is free, and, from its foundation in 1902, the school has depended entirely upon voluntary contributions for its support. "There have been few large donations and the donors represent all classes of the community—patrons of and workers in sociological, economic, philanthropic, and educational fields, employers of labor, and auxiliaries of many kinds of workers organized for special purposes. The most significant help, perhaps, and the largest in proportion to its income, has been that of the wage-earners themselves—not only the girl who has benefited by the instruction, but the general mass of women workers."

Mrs. Woolman's book is condensed experience and as such is an epitome of the present movement for vocational education. This experience has had great influence on the organization and methods of the new industrial schools of the country and the principles for which it has stood from the beginning have gained wide acceptance during the last three years. This little volume is thus the record of an epoch-making experiment.

FRANK M. LEAVITT

THE UNIVERSITY OF CHICAGO

A Critical Study of Current Theories of Moral Education. By Joseph Kinmont Hart. Chicago: The University of Chicago Press, 1910. Pp. v+48. \$0.53 postpaid.

The present wave of interest in moral training is advancing rapidly in America. Commissions and national societies are exerting themselves to provide some better substitute for the old-time religious instruction. There is even danger that teachers may have forced upon them a new formal responsibility. The manual and household arts have gained a place in the curriculum by means of the prejudice in favor of a disciplinary label, "manual training," but the latest report of the dean of Teachers College shows that this term is being crowded by others which indicate the content or subject-matter rather than the discipline. Meanwhile moral training is pressing for recognition. Mrs. Cabot's Ethics for Children, which was written for the South

Dakota Commission, is probably the most satisfactory work with which to meet practical immediate situations.

Dr. Hart's dissertation will be of help to the student who wishes to see the problem in its large bearings. It does not provide easy reading nor does it tell just what to do tomorrow or next week. The basis of his discussion lies in the work of Dewey, Cooley, Tufts, Angell, Mead, and others, and his treatment takes account of the foundations of the subject in the history of science and philosophy. While there is no sacrifice of substance to immediacy, the work is practical and useful throughout.

"The Nature of the Concrete Educational Problem" is stated. Then follows "The Nature of the Moral in Education," given first tentatively and then in "An Organic Statement" under (A) "The Psychological Point of View for Moral Education," (B) "The Ethical Point of View: The Content of Moral Education," (C) "The Logic of Moral Education." This comprehensive outline might lead one to fear inadequacy in the final section, "The Logic of School." But there is a firmness of grasp here also which causes the reader to wish that the author would expand this dissertation into a larger book. He shows that he has an intimate acquaintance with the field both in Europe and in America, and it would be helpful to those who must meet direct needs if he would analyze the material and methods of the German, the French, the Ethical Culture Schools, and other systems, and show us the serviceable elements in them.

What he has done, and done well, is to show the superficiality of much of the direct instruction, due to the fact that the direct application of ideas is as inadequate as was dependence in earlier days upon "innate ideas." "The final demand of the moral life, and, accordingly, of moral education, is this: that the process of experience through the plastic years shall result in the complete organization of the process of reflection so that the individual may be prepared to apply his experience at any point where moral tension may arise."

Life consists of a world-building by means of which a system of meanings is organized which forms a self that uses habits, customs, and traditions, and is intelligent. "The powers of the self have to be developed through the development of a world calling for those powers. The self reflects the world that it lives in, i.e., that has risen into consciousness with it. Education has, accordingly, the problem of providing for such creative situations in the developing experience as shall insure the rise of the larger self and the more inclusive world." Seldom has a writer succeeded better in freeing himself from the humanistic fallacy of the subordination of nature to man, or come nearer to writing a statement sufficiently inclusive to account nature as a distinct factor of co-operation in the developing situation.

The quotations given indicate the author's view of the inadequacy of an isolated school; in fact, while selection is duly recognized education is seen as a matter of the whole situation, however large that may be. As a contribution to the philosophy of education the author shows, or at least sugests, a method of treatment of value to the reader whether his natural bias be that of idealism, realism, or pragmatism. Locke's conflict between sense and "the candle of the Lord" does not here lead to dualism. A more adequate

meaning and use is evident for such problems as those of recapitulation, the drill period, the much-overworked subconscious and dual self, etc. The result is one of the best aids that we have had in working toward a sane basis of approach to moral education in a sense in which one is not justified in leaving out of account industry, vocation, the claims of modern life, or even nature. In a very real sense limitations become resources.

FRANK A. MANNY

WESTERN STATE NORMAL SCHOOL KALAMAZOO, MICHIGAN

The College Mathematics Notebook. By Robert E. Moritz. Boston: Ginn & Co., 1911. Pp. 106. \$0.80.

This notebook was designed for the use of classes in trigonometry, college algebra, and analytic geometry. It can, however, be used to advantage by students of physics, chemistry, and engineering, and is well adapted for use in graphical work and computations of all kinds.

There are ninety-five sheets of squared paper, 15 by 22 centimeters, and five sheets of polar-co-ordinate paper. These pages are ruled horizontally on the reverse side for recording the data and results. The lists of most important formulas of algebra, geometry, trigonometry, and analytic geometry, and seven two-place tables will prove a great convenience in making computations. The biflex binder makes it possible to add or remove pages very readily.

Н. Е. Совв

LEWIS INSTITUTE CHICAGO

School Books and International Prejudices. By Albert Bushnell Hart. New York: American Association for International Conciliation, 1911. Pp. 16.

This little pamphlet, published as "No. 38" by the American Association for International Conciliation, deserves a careful reading by teachers of history and those preparing textbooks for use in our schools. It deals primarily with the subject of international wars and their one-sided treatment in many of our textbooks.

Accounts of wars, civil and international, have always filled a large space in our histories. This is due, probably, to three reasons:

First, wars, in modern times at any rate, are usually the volcanic explosions of forces that have long agitated society. They mark the crises in the evolution of a people. For this reason wars have held, and must continue to hold, a conspicuous place in the drama of national development.

The other motives that have led historians to give so much attention to wars are the desire to make their stories interesting and a zeal to inspire feelings of patriotism. It is a question, though, whether the sort of patriotism that is fanned into life only by a spirit of hatred for other nations and peoples is the kind that makes for the most useful type of citizenship. Would it not be possible to create a much more effective civic spirit and to arouse just as

great an interest in history by bringing students into touch with the vital questions of social progress, and helping them to understand that society is constantly struggling to accomplish certain great purposes in times of peace as well as in times of bloodshed? This is a question for teachers of history to ponder.

Professor Hart's little pamphlet is a vigorous protest against that form of teaching which is calculated to awaken prejudices in the child's mind which can hardly be overcome even in mature life. "The time has, come," he says, "when school books prepared for both American and British youth should recognize this state of things: when the Revolution should no longer be treated as a causeless aggression but as a deep and broad Anglo-Saxon movement in which both sides had some right and both had some wrong."

EDWARD E. HILL

CHICAGO NORMAL SCHOOL

Physics. By Charles Riborg Mann and George Ransom Twiss. Revised edition. Chicago: Scott, Foresman & Co., 1910. Pp. 424. Illustrated. \$1.25.

This little book, although appearing under the title of a revision, differs from the earlier editions in so many respects as to be in effect a new contribution to the list of high-school texts. The activity of one of its authors in recent discussions concerning the shortcomings of present-day physics teaching in high schools gives to it a certain special interest in so far as it may be regarded as illustrative of the kind of course for which the most extreme advocates of reform in physics teaching stand. It will probably be a matter of some satisfaction to the more conservative teachers to find how little this book differs from what may be regarded as the typical elementary text of the present time. In view of this fact it is peculiarly unfortunate that the authors have seen fit to insert a preface which repeats, in the most sweeping form, some of the charges against recent methods of physics teaching. Such a preface is likely to create, in many cases, a prejudice against the book which is in fact not justified by the text itself.

The distinctive features of the book are: (1) a definite and conscious attempt to teach a scientific method of study rather than to promote the acquisition of information; (2) the arrangement, including the division into two parts, allowing a choice of material for a short or long course without sacrifice of continuity; (3) the absence, except in the final chapters, of the c.g.s. units and the symbolic equations; (4) the really excellent summaries and the lists of suggestive questions and problems which close each chapter.

Concerning the wisdom and value of these features there is likely to be a wide divergence of opinions. Most teachers will undoubtedly agree that it is desirable to teach the method of science so far as this is possible without sacrifice of other ends at least equally important, but very many good teachers will doubt the possibility of teaching a scientific method by the use of any text, however good, unless it is in the hands of teachers who have themselves acquired the method; and it is unfortunately true that such teachers are not generally available for the smaller high schools under existing conditions.

The choice and arrangement of what the preface calls "mere subject-matter" is perhaps the best feature of the book. The most notable feature of the treatment is the omission throughout the majority of the chapters of the familiar algebraic equations. This is, in the opinion of the reviewer, an important step in the right direction. It must not, however, be assumed that the teaching of mechanics without formal equations means less hard work upon the part of either teacher or pupil. In fact the contrary is probably true, since the solution of a problem by purely arithmetical analysis requires more severe mental labor than substitution in a formula. It is to be regretted that the authors did not carry out the spirit of this reform to its fullest extent and omit not only the algebraic equations but also the scarcely less objectionable verbal equations which have replaced them.

On the whole the book is far better than the promise of its preface. If it is not so good from the standpoint of scientific unity as the earlier book by the same authors, it is likely to be more teachable, and it is in appearance at least far less beset with mathematical difficulties. The style is in most parts clear and pleasing. The one objectionable feature in this respect is the large number of catch phrases used at the end of paragraphs: for instance, the statement of the work principle (p. 36) in the form, "Work out is never greater than work in." In no point are the graduates of our high schools weaker than in their ability to give clear, intelligible, and reasonably full statements concerning any subject under consideration, and to put before them as models such abbreviated statements as that quoted seems to be, to say the least, unfortunate.

The use of the familiar British units instead of the c.g.s. system is to be commended as tending to make the subject appeal more to the everyday experiences of the pupil. The chapters on electricity are perhaps the most satisfactory portion of the book, and are not excelled by any elementary treatment of the same topic with which the writer is familiar. The mechanical features of the book are excellent, while special mention must be made of the profusion and pertinency of the illustrations.

Altogether the book should be in the hands of every teacher of elementary physics, and should take its place as one of the useful, teachable texts.

A. A. KNOWLTON

THE UNIVERSITY OF UTAH

The Care and Training of Children. By Le Grand Kerr, New York: Funk & Wagnalls Co., 1910. Pp. xvi+233. \$0.75 net.

The oft-repeated charge that men and women take upon themselves the responsibility of the care and training of children without themselves having had any training therefor is undoubtedly true. The charge was probably never better founded than today. There is no vocation which carries with it greater responsibility or is fraught with such potency for good or evil, and yet there is none in which there are more untrained persons. Even the idea of seeking instruction does not appeal to a very large number. It must ever be a cause for amazement that so many children turn out as well as they do, when one considers the lack of knowledge of child nature and life which characterizes

so many parents. Men will "read up" on the subjects pertaining to new vocations or new duties, but the task of training and caring for a developing human being is accepted and pursued without much library or other research. To those who do wish to know something of the principles which underlie the physical and mental life of a child-their child perhaps-Dr. Kerr's book should prove of great value and inspiration. Coming to his task with large experience, gained in many hospitals and from a large practice as a children's physician, with an outlook broader than that of the mere specialist, and possessing the pen of a ready writer, he transcribes into language easily understood the results of his observation and study. The book is not formidable in size, its arrangement of subjects is logical, it is up-to-date in its recommendations, and its statements are based on true pedagogical and scientific principles. The author proceeds upon the theory that there are general characteristics common to all children and that therefore certain broad principles of action and conduct in their care may be laid down. He is, however, not oblivious to the fact that there are also characteristics and peculiarities which separate one child from another. These differences are to be noted even within the small circle of the single family. The presence of these peculiarities makes necessary the study by the parent of the individual child, and the application of the general principles in detail. It has been the defect of many books of counsel on this very subject that no notice has been taken of the important fact of variation, and the result has been to confuse the minds of parents when they found that their particular child seemed to differ from the model presented for study by the author.

The author also lays stress upon the recognition of the physical basis for mental and moral development. To the trained teacher this may seem trite, and yet it cannot be impressed too strongly on the minds of all who have to deal with growing children. That mental development may be brought about by muscular activity, that proper nutrition may have a moral value, that adenoid growths, defective vision or hearing may render access to the physical world difficult and consequently retard the mental progress of the child, are not always fully appreciated by parents. The book does not aim to give a set of rules for procedure in all cases. It attempts by a general discussion of the child's physical welfare, its room, clothing, diet, sleep, its mental development and moral growth, its associations, reading, and discipline, to help solve the individual problem.

Dr. Kerr's book should have a wide circulation, and it may be without hesitation commended for its breadth of view, its wise counsel and suggestion in that most delicate and difficult of all tasks, the care and training of the child.

CHARLES H. JOHNSON

THE ALBANY ORPHAN ASYLUM ALBANY, NEW YORK

### BOOKS RECEIVED

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## CURRENT EDUCATIONAL LITERATURE IN THE PERIODICALS<sup>2</sup>

### IRENE WARREN

Librarian, School of Education, The University of Chicago

BILLINGS, JOHN S. The New York Public Library. Cent. 81:839-52, (Ap. '11.)

Boys and the theater. Out. 97:722-23. (1 Ap. '11.)

BURNHAM, WILLIAM H. Arithmetic and school hygiene. Pedagog. Sem. 18:54-73. (Mr. '11.)

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CAMPION, ANNA COOPER. Problems of the social worker. Psychol. Clinic 5:1-12. (15 Mr. '11.)

Chubb, Percival. Reading of high school boys and girls. Pub. Lib. 16:134-38. (Ap. '11.)

CUMMINGS, EDWARD P. Elimination and retention of pupils. Psychol. Clinic 5:20-23. (15 Mr. '11.)

CUTTING, STARR WILLARD. The teaching of German literature in high schools and academies. School R. 19:217-24. (Ap. '11.)

DUNBAR, OLIVIA HOWARD. Defective children in school. R. of Rs. 43:449-59. (Ap. '11.)

FABER, CHARLOTTE. Value of a library in teaching history. Pub. Lib. 16: 139-41. (Ap. '11.)

FOSTER, WILLIAM T. The spelling of college students. Journ. of Educa. Psychol. 2:211-15. (Ap. '11.)

HARD, ANNE. The younger generation: an apologia. Atlan. 107:538-47. (Ap. '11.)

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Kelsey, Francis W. The sixteenth Michigan classical conference. School R. 19:196-201. (Mr. '11.)

'Abbreviations.—Atlan., Atlantic; Cent., Century; El. School T., Elementary School Teacher; Journ. of Educa. Psychol., Journal of Educational Psychology; Man. Train. Mag., Manual Training Magazine; Out., Outlook; Pedagog. Sem., Pedagogical Seminary; Psychol. Clinic, Psychological Clinic; Pub. Lib., Public Libraries; R. of Rs., Review of Reviews; School R., School Review.

Kerschensteiner, Georg. The fundamental principles of continuation schools. School R. 19:162-77. (Mr. '11.)

The organization of the continuation school in Munich. School R. 19:225-37. (Ap. '11.)

KICITCHKO, N. A brief report of the Moscow experimental school. El. School T. 11:381-83. (Mr. '11.)

KOOPMAN, HARRY LYMAN. A basic educational delusion. Pedagog. Sem. 18:44-46. (Mr. '11.)

LURTON, FREEMAN E. Retardation statistics from the smaller Minnesota towns. Psychol. Clinic 5:13-19. (15 Mr. '11.)

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Ogden, R. M. Knowing and expressing. Pedagog. Sem. 18:47-53. (Mr. '11.)

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### NOTES AND NEWS

The simplest physical need of the youngest baby; the most complex ethical problem of the youth almost grown, and every perplexing thing which lies between the two extremes—all these are to be dealt with at the Child Welfare Exhibit, which is to be held in the Coliseum of Chicago, May 11-25.

This is the second exhibit of the kind ever held. The first, which was held in New York in February, was such a success from the educational point of view, that it was decided that Chicago should have the benefit of the exhibit. On the New York exhibit, sixteen months of preparation and \$70,000 were expended. The generous offer to loan the exhibit without charge aside from the transportation expenses was made and accepted. But the men and women of Chicago who were interested in the exhibit decided that they would add to it special features showing the life of the child in Chicago. Mrs. Cyrus Hall McCormick, Jr., who was one of the first to become interested in the exhibit, gave \$30,000 to insure its success. The Coliseum, twice as large as the armory where the New York exhibit was held, was secured and specialists in every line of work concerning the life of the child were put to work.

It was decided that the exhibit should be usable by those who need it most. The men and women who are in greatest need of information as to the way in which their children should be reared are the ones who cannot afford to pay to see such an exhibit. Therefore the exhibit is to be free, except on certain days, when a small admission will be charged.

The thoroughness with which the exhibit has been planned will be seen, when the general departments are considered. They are Associations and Clubs; Churches, Temples, and Sunday Schools; Health, Homes, Laws, and Administration; Museums and Libraries, Music and Entertainment, Private and Public Philanthropy, Recreation and Amusements, Schools, Settlements, Streets, and Work and Wages. Each general department is composed of many subdivisions, until the possibility of anything which bears upon the life of a child being omitted is precluded.

The methods of the laboratory are to be used at the exhibit. It is this which will give its real value. Experts in every line have been secured, not visionaries or sentimentalists. Mrs. Ella Flagg Young, superintendent of the Chicago public schools, is the chairman of the committee on schools; Miss Mary McDowell, head resident of the University of Chicago Settlement, is the chairman of the committee on recreation and amusements; Frank E. Wing, superintendent of the Municipal Tuberculosis Sanitarium, is the chairman of the committee on health, and N. H. Carpenter, of the Art Institute, is chairman of the committee on Museums and Libraries.

### THE SCHOOL REVIEW

These names will show the quality of the work which is being done for the exhibit.

Two things have been kept in view in planning the exhibit: the personal duty, as that of the mother; and the public duty, as that of the citizen. There will be things not "pleasant" at the Child Welfare Exhibit. They will be seen as Things As They Are. But there will be other things decidedly "pleasant" to be seen. They will be seen as Things As They May Be. For the men and women who are working for the exhibit are working not to show their skill as investigators or their cleverness as theorists. They are working to give an answer to some of the questions which the exhibit is to ask.

A study of the relative standing of students in college studies and in professional schools has been made at Harvard University, with the object of finding out whether any one of the college studies was essentially better than another as a preparation for professional work. The researches were confined to Bachelors of Arts of Harvard College who had graduated from the Harvard Law and Medical Schools. A period of twenty years was

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### NOTES AND NEWS

covered in the records of graduates of the Law School, and sixteen years in the Medical School. The results, as stated in *The Harvard Graduates' Magazine*, December, 1910, show that students obtaining a *cum laude* on graduation from the Law and Medical Schools were very evenly distributed with respect to the subjects of study which had been emphasized in their undergraduate preparation. In the first year of the Medical School some advantage was gained by students who had emphasized natural science subjects in their undergraduate studies, but this advantage obtained for the first year only.

With respect to the quality of the undergraduate work the results show "that the men who are destined to take the highest rank in the Law and Medical Schools are markedly better scholars in college than their fellows." Moreover, the men who are destined to be the best scholars in the professional schools are shown to have entered college younger and with fewer conditions than did those of lower rank.

The Binet tests have been applied to 1,547 children in the first five grades of a small city and country school system by investigators for the

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### THE SCHOOL REVIEW

New Jersey Training School. The object of the investigation was to determine the accuracy of the tests when applied to normal children. The results, as stated in *The Training School*, January, 1911, are as follows:

"Testing 'at age' (normal): 554 children.

"Testing above age: 1 year, 329; 2 years, 49; 3 years, 14; 4 years, 2. "Testing below age: 1 year, 312; 2 years, 156; 3 years, 79; 4 years, 37; 5 years, 8; 6 years, 6; 7 years, 1."

It is maintained that the figures "practically amount to a mathematical proof of the accuracy of the Binet tests." Four per cent of the children were found to be more than one year ahead of their age. Fifteen per cent of the children, regarded as backward children, are two or three years behind their age. In addition, 3 per cent of the total group were found to be from four to seven years behind their age. These are regarded as feeble-minded children.

It is further maintained that the results are probably typical of conditions in the average public-school system, and that they show the importance of a general use of the Binet tests in the public schools, and of making provision in special classes for the large percentage of backward and feeble-minded children.

Statistics showing the value of the special class for backward or defective children are given in an article in *The Training School* (New Jersey), December, 1910. The figures show that 20 boys from the regular schools of Philadelphia progressed at .8054 (four-fifths) of the normal rate while in the special class, whereas their previous progress in the regular grades had been .3538 (one-third) of the normal rate. The boys had spent from  $2\frac{7}{2}$  to 7 years in the regular schools, the number of grades accomplished varying from 0 to  $2\frac{7}{2}$ . From 1 to 7 years were spent in the special class, the grades accomplished varying from 1 to 4.

A recent report of the Royal Commission on the Feeble-minded shows that the number of mentally deficient persons, adults and children, in England and Wales, is approximately 138,529, corresponding to one affected in every 248 normal persons. In the elementary-school population the number of mentally deficient children is 0.73 per cent of the total. The defective persons are classified as feeble-minded, imbeciles, and idiots.

The following statement, showing for three centuries the stage of advancement in the educational and professional scheme reached by young men at the age of nineteen, is given in *Education*, January, 1911, p. 292:

- I. An average professional man of 1700 A.D., after one year of practice.
- 2. A college man at graduation in 1800.
- 3. A university Freshman in 1875.
- 4. A high-school graduate in 1910.